OCCUPATIONS FOR LITTLE FINGERS

A Manual for Grade Teachers Mothers and Settlement Workers

SAGE AND COOLEY

OCCUPATIONS FOR LITTLE FINGERS

INDIAN LIFE, FIRST GRADE, HORACE MANN SCHOOL, TEACHERS COLLEGE, NEW YORK CITY

OCCUPATIONS FOR LITTLE FINGERS

A Manual for Grade Teachers, Mothers and Settlement Workers

BY

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ILLUSTRATIONS BY THE AUTHORS

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TO

THE MANY LITTLE PEOPLE WHO

WILL FIND JOY THROUGH

EXPRESSION

PREFACE

"Every task, however simple,
Sets the soul that does it free."

FROM time immemorial man has worked with his hands, and his time and attention have been utilized in the production of things both useful and ornamental. "Necessity" very often was the "mother of invention," and the need for food, shelter, and clothing led to the gradual development of industries, from the simple handwork to the elaborate products of the factory system of to-day.

Whether, then, through necessity, or simply because of joy in expression through the hands, the world is to-day a rich treasure-house stored with the wonderful products which man has created. The instinct for production is not dead, but will last as long as man, for to create is a divine and God-given instinct.

Froebel, in his study of the child, realized that his natural activity could be utilized, and turned into channels which would lead to his gradual development, physical, moral, and intellectual. He believed in the development of head, heart, and hand. For that purpose he introduced the gifts, occupations, songs, and plays, and allowed the child to invent and create. Joy and happiness in work were the results.

For some time kindergarten training was a precarious feature in education, but now that this branch has been incorporated into the public-school systems and colleges, and finds a place even in university work, it seems an assured fact that children are to receive some of their early training in the kindergarten. Here their crude ideas are worked out through the materials offered, and the child improves in his ability to

express himself with his hands—for expression is necessary if images are to be clear. This handwork satisfies the early craving of the child for play and the practical, and the gifts and occupations become playthings in his hands, but, unknown to him, things of educational value.

When the child leaves the kindergarten and passes to the grade school, too often the change is a very abrupt one. There is a lack of the old-time freedom, and an absence of the play materials. Children then begin to lose interest, and the attention is often forced rather than spontaneous, and teaching ceases to be as effective.

As a help in alleviating this difficulty, handwork as one of the mediums of expression has been introduced into many of the grade schools, sometimes in correlation with other subjects, but more often simply in an occupational way. Handwork as manual training is most effective when taught in relation to the other work of the grade, so that there is unity and a harmonious development. By manual training is meant not simply work which is spontaneously interesting and keeps the child alert and active, but work which is educationally effective. This effectiveness is in the hands of the teacher, and will be worked out by her if she understands the theory back of real manual training.

This little book is in answer to a number of demands which have come from different parts of the country. Busy mothers at home, grade teachers and settlement-workers are constantly asking, "What can I do with my children? They want something to *do*." The object of this book is simply to furnish some ideas and to act as a suggestive medium; in no way does it attempt to correlate the work for the teacher. It has been left for her to utilize the material here offered in working out her schemes for unity in the development of the class work.

In the study of various kinds of handwork for children, one will find that they are most interested in form when it is

associated with function or color; that children are interested in things in connection with people, animals, and plants, and when they can construct something in which they can feel the sense of self, as the cause of that construction, the joy of expression brings great happiness.

Constructive handwork offers many opportunities for the development of design, and often a detail of design lends an atmosphere of greater reality to an object, especially when the object made is of miniature size and is for play-use, as a doll's table-cover, cushion, chair, hat, etc. Children feel many things in their imagination, and a little touch of reality in design furthers that imaginative thought. Many opportunities are offered in this work for the teaching of harmony of color, for the adaptation of design to use, and for the correct placing of design in relation to the space offered for decoration. Teachers are urged to lay particular emphasis on the design, which in previous years has been very much neglected. "The highest aim of art is to make some useful thing beautiful."

The writers have realized the necessity for keeping the cost of the articles made at a minimum. As represented, perhaps a few are beyond the average public-school treasury or purse of the settlement-worker, but they can, almost without exception, be reproduced in less expensive materials. The work will be equally valuable, only in the cheaper goods there is not always the same opportunity for harmony of color and for artistic production.

Perfect and accurate work should not be expected from young children, but the teacher must consider the age and ability of the child, and judge the results accordingly. A very crude piece of work, produced perhaps by a child in some school of reform nature, may have been of far more help and value in that child's development than that produced under far more favorable circumstances.

The writers hope that within these covers may be found

suggestions for the teachers of such little people as especially need help, and that the book may be the means later on in life of introducing them to much broader fields of expression through which great joy may come to them and be given to the world.

Thanks are due to the Domestic Art Students of Teachers College, Columbia University, for the use of some of the articles photographed.

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THE child is naturally a worker. He will destroy if he does not know how to make. Destruction interests him as much as construction. He likes to see "the wheels go around," and it matters little to him if the gratifying of his desires is advantageous or not to the article in hand.

Mothers, who were the earliest and should be the best teachers, long ago found that the happiest child was the busy one. They discovered also that to keep him at work he must be interested in the thing he is doing. To accomplish this they must provide that which he feels to be worth the effort. It must be something which he understands and which he can finish in a short time. A stupid, difficult "stint" such as poor Little Prudy had to finish daily is not calculated to increase a love for work. The wise and patient mother has it in her power to create an interest in the daily work of the household. Even such homely tasks as sweeping, dusting, and sewing may be taught to the children and prove pleasurable and profitable to them.

Handwork has its place in education as well as in the daily life. It should ever be "a blessing, not a doom." It may give in both places rich returns, which should affect the child in the development of his thought, of his emotional life, and of his character. The results of the work are the child's, but the mother and the teacher must study how best to give the full joy of work to the children.

This book considers the needs of both the mother and the teacher. It has been written by two teachers who know and love children and who have practically worked out with them the things of which they write. It tries to meet the

child's constant cry, "What shall I do?" with a direct reply full of help and of interest. Mere formal models are not mentioned, the book dealing with attractive and useful articles. It sets forth the best way of making such articles and it tells what they should cost. Simple crafts from many industrial fields are chosen in order that variety in work may increase the child's interest in the world about him. The teacher who has the handwork in the early grades finds here a series of valuable suggestions, while the mother is fortified with delightful occupations for rainy days. This little book should therefore increase the helpfulness and happiness of many little workers in the school, the settlement, and the home.

MARY SCHENCK WOOLMAN.

OCCUPATIONS FOR LITTLE FINGERS

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CHAPTER I

A TALK ABOUT THE MATERIALS USED

THE resourcefulness of localities varies in such a degree that materials which may be quite feasible and easy for one teacher or mother to obtain may be rather difficult for another. In this talk on the materials used it is hoped that suggestions may be offered which will make it possible for even those in more remote districts to carry on some of the occupations presented, though perhaps in not quite the same way as outlined in the following chapters.

Many varieties of cord will be found adaptable to the kind of work presented in the chapter on that subject. Even a piece of discarded string may be utilized; odds and ends, saved from time to time, may be sorted and knotted together if it is possible to procure no other.

CORD

Macramé cord lends itself to this variety of work in a most pleasing way, as it is soft and pliable. It may be obtained from wholesale twine houses, and costs about twenty-five cents a pound, and the numbers vary according to the size of the cord, No. 16 being finer than No. 60. A hank of the fine will go farther than one of larger size. The hanks are wound in a way similar to worsteds, and for large classes the teacher will find it advisable to wind a number of small balls, and distribute the cord in that way. Colored macramé may be procured in balls for ten cents each.

The netting-needles used in making cord hammocks, bags, etc., in which the netting stitch is used, may be procured generally at a kindergarten supply place. If none is near, the needles and mesh-sticks may be made by the children (see Fig. 22), or pieces of old rulers may be used for mesh-sticks, and a round pointed stick for needle. The cord may be wound around the stick first to one side and then to the other. Care must be taken, however, not to fill the needle too full, as it will be quite difficult to put through the mesh.

RAFFIA

Raffia has been used so extensively during the past few years that it will perhaps be the material most easily obtainable. It is possible to order small quantities by mail, or to obtain it at a neighboring florist's. Large quantities may be ordered from wholesale seed stores in most of the large cities. Some wholesale firms have several qualities, and will ship in large quantities at reduced rates; colors may also be obtained. The kindergarten supply places also deal in both plain and colored, and are, perhaps, more satisfactory shops if only small quantities are desired. The department stores in some cities also carry a supply.

Raffia comes principally from Madagascar, and is a natural material which forms the outside covering of a palm. It is of yellowish color, soft, and easy to handle.

More satisfactory results may be obtained in working with the colored raffia if the vegetable dyes have been used.

CANVAS SEWING

Many materials may be used for the work in coarse sewing. If the locality does not offer any of the canvas or burlap varieties, one can always find a substitute, such as heavy scrim, crinoline, or some coarsely woven material. Denim can be found in most places.

The Java canvas, basket burlap, and cotton burlap are so wide that a yard is sufficient for quite a number of small articles. Jute burlap, one yard wide, may be bought for

15 cents. Java canvas is more expensive, the price varying from 75 cents a yard to $1. The basket burlap is woven in squares and costs $1.50 per yard. The price of denim is 15 cents a yard, and that of cotton burlap $1.25.

These may be obtained at art-embroidery shops, and often in department stores. By the quantity they seem costly, but it must be remembered that each child receives only a small piece, and the canvas is very wide.

Germantown wool may be used for sewing, and although less expensive than a mercerized cotton, is liable to become moth-eaten. It may be obtained at art or department stores. Poseidon, referred to in Chapter IV, is a mercerized cotton thread, and comes in small hanks in various numbers. The colors are very beautiful and make an artistic finish. It may be obtained for 35 cents a dozen skeins.

San silk may be substituted for Poseidon, although the colors are not as pretty; a large spool costs only 4 cents, and if the best colors are selected the results are very effective. Some art stores and nearly all department houses keep it. The Prisma cotton mentioned is a heavy form of Poseidon.

CARD SEWING

For the card sewing, kindergarten supply places furnish the best variety. These cards may be obtained in many sizes. Those 4 x 5 inches cost 30 cents a hundred. If it is not possible to obtain these, any scrap of card-board or heavy paper, and even an old visiting-card, may be pressed into service.

PAPER CUTTING AND FOLDING

Any available piece of paper may be used for folding. Cartridge-paper by the roll, for wall hanging, is inexpensive. It may be found at all paper-hangers and decorators', for about 20 cents a roll. Many other useful papers may be found at the same place.

Ordinary brown, and even cheap straw papers, make artistic effects, either as backgrounds or for the folded form.

Kindergarten papers come in all the colors, shades, and tones, and are very beautiful. Those cut 4 x 4 inches cost 20 cents a hundred, and can be obtained at kindergarten supply places. Black paper is useful in cutting, especially for silhouetting, and is inexpensive. Bogus paper is also very cheap; it costs 70 cents per 500 in the 9 x 12 inch sheets.

CLAY

For very simple work with young children, the potter's gray clay serves the best purpose. It can be obtained at a neighboring potter's or at pottery works, or even at kindergarten supply houses. It is sold in bricks, and costs about 2 cents per pound, or $1.50 per 100 pounds.

WEAVING MATERIALS

One simple, flat, wooden stick is the only tool which is really needed, and much may be accomplished without this, with wire, toothpicks, string, knitting-needles, etc.

Looms of some description must necessarily be used after the simple splint weaving has been studied. Looms may be improvised from paper candy-boxes, or any kind of a small wooden box will answer the purpose.

There are a number of small looms on the market, such as the Woolman, Todd, and others. Indian looms may be made of four natural sticks bound at the corners. The marketable looms range in price from 75 cents to $1.50.

The woolen yarns for weaving seem to be best in effect, but are more expensive than cotton. Strips of cloth or rags may be used, and are very inexpensive. Carpet yarns may be procured in a number of shades at 75 cents per pound.

Germantown wool and wool rug yarn are soft and pleasing. Wool yarns may often be obtained from rug houses, that are glad to dispose of small quantities of left-over shades in various numbers. These vary in price from 75 cents to $1.50 a pound, according to number.

Raffia may be used in weaving small articles, but is not as satisfactory as other materials. Candle-wicking or cable cord is inexpensive material for elementary weaving work.

Linen thread is generally used in making bead-work because of its superior strength. It may be obtained at any department store.

BEAD-WORK

The beads come in a variety of sizes, and are numbered according to color and size. The wholesale bead houses furnish illustrated lists of the prices per bunch; they may also be purchased at the shops dealing in Indian goods. At the kindergarten supply houses beads of assorted colors are sometimes sold by the box.

Most of the materials mentioned in the chapters on Crocheting, Upholstery, and the Doll's House may be obtained at a department or art-embroidery store. A list of the materials, with their widths and prices, is given below:

DOLL'S HOUSE UPHOLSTERY CROCHETING.

	Width, inches	Price per yard
Burlap (cotton)	67	$1.00
" (jute)	26	.35
Canvas (Java) (cream)	36	.70
" " (colors)	36	.45
" " "	18	.35
" " (white)	18	.25
Dimity	30	.25
Scrim (heavy)	40	.35
Muslin—Alpine Rose	36	.11
" (unbleached)	36	.07
Holland Linen	42	.35
Art Ticking	36	.25
Brussels Net	36	.35
		Per lb.
Wool—Columbia Yarn		$1.45
" —Saxony		1.50
" —Zephyr		2.20

The material for the rattan furniture may be bought at a kindergarten supply house or at a rattan company. It is sold by the pound and is numbered according to size—the

smaller the number the finer the reed or rattan. The numbers and prices are given below:

No. 1, per lb.	$1.25
No. 2, "	1.00
No. 3, "	.75
No. 4, "	.75
No. 5, "	.60

Retail prices have been given in all the lists furnished in this chapter, and are, of course, subject to variation. By buying at wholesale a large reduction may be obtained.

Where the cost of articles is given in the following chapters the estimate is based on materials bought in large quantities, and in every case the cost has been worked out.

CHAPTER II

SOME USES FOR CORD AND STRING

THERE is, perhaps, nothing which so appeals to the average boy or girl as a bit of string. It has wonderful possibilities, and slow is the boy who does not work it to its utmost capacity, from spinning a top to playing at cat's cradle with another boy.

When it is introduced into the school-room the children are made extremely happy. Simple knotting may be begun with six-year-old children. This work trains the eye with the hand; measurement and spacing are taught, as well as number, color, and a certain deftness of touch. The child must be attentive and thoughtful in order to follow well, and he is so interested that he does so unconsciously. This work strengthens the arm and finger muscles, and appeals to the child's desire to invent.

Macramé cord is generally used for this work, but odd bits of string may be utilized if no other can be procured.

Various kinds of knotting may be taught, and these can be used in many ways, in the making of raffia hats, bags, nets, etc.

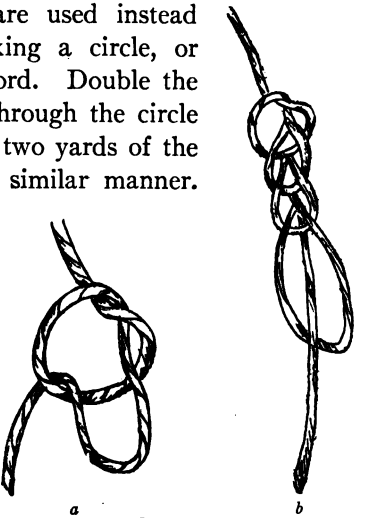
In demonstrating the cord work, the teacher will find it helpful to use large upholstery cords of various colors.

Cord work may be used as an introduction to crocheting, and simplifies the approach to that work. It has been used with great success in the summer playgrounds for children, and the teachers have welcomed it as an interesting and instructive occupation.

I. The Curtain Cord

Materials.—Macramé cord, No. 16, 3 yards.—1 brass ring, 1 inch in diameter. Approximate cost per child... .01

The curtain cord is made by using the chain-stitch, as in crocheting, but the fingers are used instead of a needle. Begin by making a circle, or letter O, at one end of the cord. Double the long end and draw the loop through the circle (see Fig. 1). Continue until two yards of the cord have been looped in a similar manner. Then pull the end of the cord all the way through the last loop in order to fasten it securely before finishing with the ring. Place the ring close to the last chain-stitch, and use the blanket-stitch in covering the ring with the cord (see Fig. 2). After this has been done, run the end of the cord up through the chain-stitch for two inches, and cut it off close.



a *b*

FIG. 1.

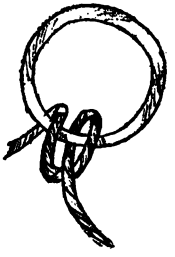


FIG. 2.

II. The Sailor's Lanyard

Materials.—Macramé cord, No. 16, 8 yards.—Macramé cord, No. 6, 2 yards. Approximate cost per child ..... .01

Five inches from the end of the eight-yard piece start the chain-stitch, as in making the curtain cord (see Fig. 1). Continue to within five inches of the other end of the cord. Pull the end

through the last loop in order to fasten it securely. With the fine cord bind the two five-inch pieces together. Begin just below the last chain-stitch, working over the end of the fine cord with the blanket-stitch (see Fig. 2). Continue for one inch from the chain-stitch, working over the two cords. Divide the two cords and form a loop, having the ends overlap (see Fig. 3). Continue with the blanket-stitch around the loop thus formed. Run the end of the cord under the blanket-stitch when the loop has been finished.

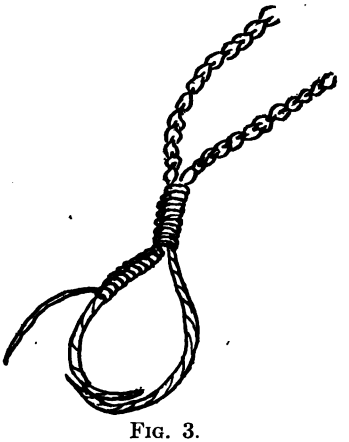


FIG. 3.

III. The Whistle Chain

Materials. — Macramé cord, No. 60, 2½ yards. — Whistle. Approximate cost per child..... .01½

Four inches from one end of the cord begin the chain-stitch, as in making the curtain cord (see Fig. 1). Continue to within four inches of the other end, and pull this through the loop in order to fasten it. The whistle is strung on one of the four-inch ends of the crocheted chain, and that end is run up through the chain-stitch. It may be sewed to hold it more securely. The other end for the button loop is finished by running the end of the cord down through the crocheted chain and fastened with sewing.

IV. The Scissors' Guard

Materials.—Macramé cord, No. 60, 3 yards.—1 pair small scissors.

This guard is made of a three-strand braid. Cut one yard from the three-yard length. Double the two-yard

length to find the centre. Put the end of the one-yard piece under the centre and allow the end to extend four inches for the fastening of the scissors. Braid the three cords together (see Fig. 4) to within six inches of the ends.

FIG. 4.

In braiding, the right and left hand strand in turn crosses the centre strand, and so becomes the centre one itself. Make a half-hitch with one strand over the other two, in order to hold it in place (see Fig. 5). Take the single cord of four inches, which extended above the braid, pass it through one ring of the scissors handle and then down through the braid. In order to hold it very securely a few stitches may be taken with a needle and thread. Any suitable article may be substituted for the scissors. The price of this model depends upon the quality of scissors.

FIG. 5.

FIG. 6.

V. The Horse-Reins

Materials.—Colored Macramé cord, No. 16, 5 yards.—White Macramé cord, No. 16, 5 yards. Approximate cost per child..... .02

Knot the ends of the two cords together. Hold the knot and throw one cord around the fingers of the left hand, forming a loop. Pull a loop of this cord partly through the loop thus formed. Through this loop draw a loop of the contrasting color cord, and draw it up securely by pulling the end of the cord previously looped (see Fig. 6). Continue the whole length of the cords, by alternating the loops of color, and

pulling them in place by drawing the end of the contrasting color.

After this double chain-stitch has been completed, the horse-reins may be shaped to form the cross-piece. Make a circle of one-third of the chain by running the end of the cord in and out of the chain. Make a large circle with the remaining two-thirds by fastening the end six inches from the first fastening on the small circle (see Fig. 7).

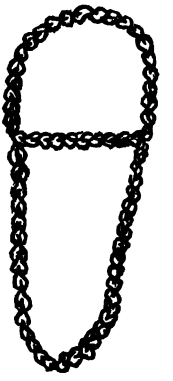


FIG. 7.

The horse-reins may be made with the single loop chain, and also larger in size. They may be dyed any attractive color, and if made of a heavy cord (No. 60) and trimmed with bells, may be used by the children for Christmas gifts.

VI. Braided Ties for Sailor Suit

Materials.—Macramé cord, No. 16, 12 yards. Approximate cost per child..... .01

Cut the twelve yards into six two-yard pieces. Three pieces will be used for each tie. Lay two cords evenly together. Take the third cord, double it in half, and loop it

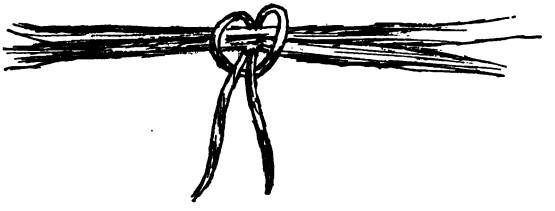


FIG. 8.

around the middle of cords one and two (Fig. 8). Then begin to braid. Each strand of the braid is composed of two cords. In making a three-strand braid, the right and left-

hand strand in turn crosses the centre string and so becomes the centre one itself.

The second tie may be made in a similar way and used on the boys' sailor suits.

The children may also make ties for their flower-presses. They may be made in like manner, but in one piece, and of sufficient length to go twice around the press and tie.

VII. The Overhand Knot

Plate I, No. 7, shows the overhand knot and its use and application in a small piece of netting. The cord is thrown to either the right or left, forming a loop, and the end of the cord is drawn through it. Two cords may be knotted together with this knot, as shown in No. 7.

VIII. The Square or Hard Knot

Plate I, No. 8, shows the steps to be followed in making the square knot. The two ends are to be knotted together. Cross them and twist the upper end around the lower cord, bringing the ends up in position. Cross these two ends again, having the original upper end again go over and around the end it crosses.

This knot is especially useful in tying bandages.

IX. The Weaver's Knot

Plate I, No. 9, if carefully studied, will reveal the method of making the weaver's knot. It is the knot especially used in weaving, and is strong and easily made after some practice.

Cross the two ends at right angles. For convenience, we will call one the old end and the other the new piece to be joined to it. Place the new under the old and at right angles under the thumb. Hold them securely. Pass the new cord

around the outline of the thumb-nail and under itself, then over the old, and hold it under the thumb. Pass the old end through the loop formed by the new. Hold all the ends and draw up the knot by pulling the newly added cord.

This knot is too difficult for very young children, but may be given to the older ones.

X. The Soft Carriage-Whip

Materials.—Macramé cord, No. 60, 4 yards. Approximate cost per child..... .01

Cut the cord in two pieces of two yards each. Cross the two at right angles in the middle. Tie the lower cord over the upper one at the point of crossing, using the single tie of the square knot. Continue to build up the whip by alternating the cords tied, one above the other, to within six inches of the ends of the cords. One inch from the last tie, on each cord, make a single overhand knot. Continue knotting at inch intervals, on each of the four cords, to form the lash of the whip.

XI. The Hammock

Materials.—Iron rings, 1-inch, 2.—Macramé cord, No. 16, 12 yards.—Macramé cord, No. 60, 1 yard.—Macramé cord, No. 6, 1 yard. Approximate cost per child..... .02

Divide the twelve yards of No. 16 cord into eight pieces of one and one-half yards each. Double each strand in the middle and loop the eight through the iron ring (see Fig. 9). Four inches from the ring start the knotting to form a mesh. The overhand knot is used (see Plate I, Fig. 7). Take the first two cords in the right hand, throw the cords in a circle to the left and draw the two ends through it. Continue across the hammock, knotting the strands in order and by twos. One inch from the first row of knots make a second row. In starting it, the first cord is omitted. This forms the

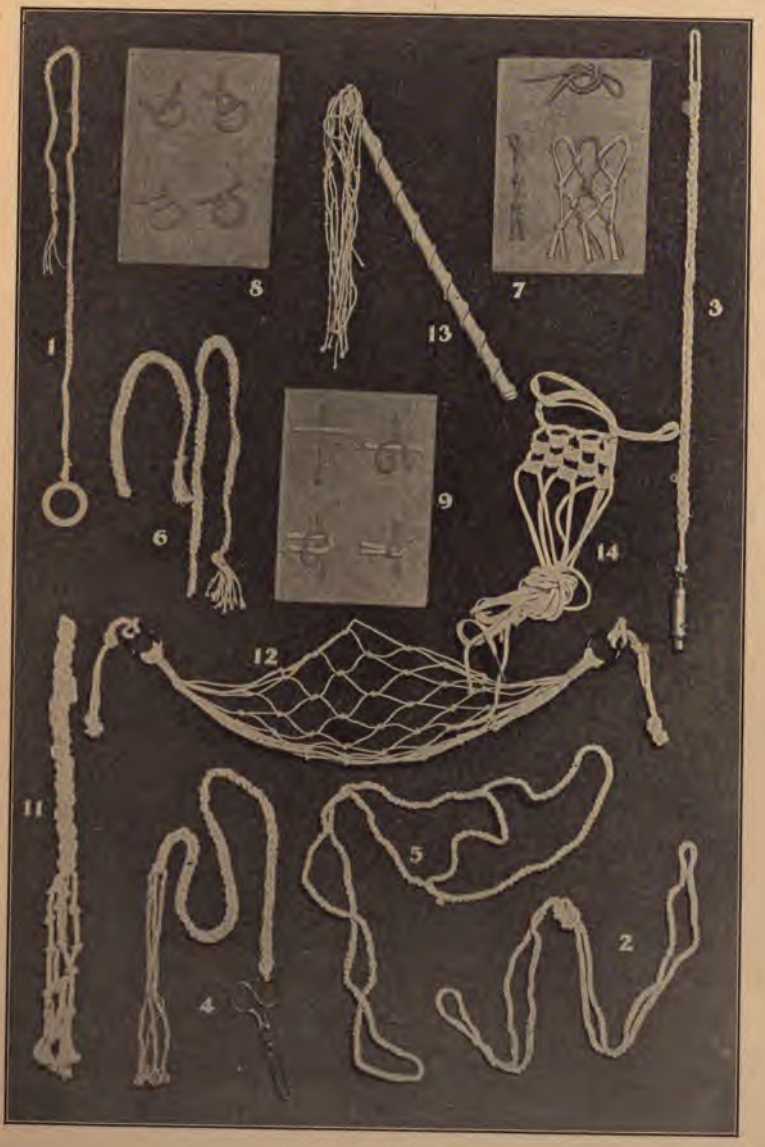
mesh. On the third row, the two outside strands are again knotted in place. Continue the netting for eight or nine rows. Gather the ends together and slip them through the second iron ring and bind with half a yard of the fine cord. In large hammocks, where there is to be some strain, the ends may each in turn be passed around the ring and looped with an overhand knot before binding.

To bind: Hold the net of the hammock in the left hand. Take one end of the fine cord in the right hand, and place the end of it as near the ring as possible and on top of the strands. Carry the fine cord toward the netting for one inch and back again toward the ring. A loop will thus be formed. Begin to bind over this loop, working from the ring toward the net. When all the cord has been wound evenly and tightly around the strands, put the end through the loop over which the cord has been bound. Take the first end of the cord extending at the ring, and pull it carefully. The loop will draw the cord under the binding and then the ends may be cut off close. Care must be taken not to pull the cord all the way through or the binding will be loosened.

FIG. 9.

Cut the heavy cord in two pieces. Double them in the middle and loop one piece through each ring (see Fig. 9). Knot the two ends of each with the overhand knot. Halfway between the rings and the ends of these hangers make another overhand knot in order to hold the cords securely.

Large hammocks may be made in a similar way with heavy cord and more strands. This makes very good work for playgrounds where the hammocks are afterward used for the babies.



CORD-WORK

1. Curtain cord.
2. Lanyard.
3. Whistle chain.
4. Scissors guard.
5. Reins.
6. Ties for Sailor Suit.
7. Overhand knot.
8. Square knot.
9. Weaver's knot.
11. Soft whip.
12. Hammock.
13. Whip.
14. Sailor's knot.

XII. The Lash Whip

Materials.—Macramé cord, No. 16, 10 yards.—One piece of ¼-inch rattan, 9 inches. Approximate cost per child. .02

From the length of cord cut off six yards for the binding of the handle. Divide the remaining four yards into eight pieces of half a yard each. The eight are to form the lash. At both ends of each half-yard piece make an overhand knot close to the end. From each knotted end work toward the middle of the cord, making four more overhand knots at one and one-half-inch intervals. There will be a space of three inches left in the middle of each lash. This plain part is bound to the handle.

One-half inch from the end of the rattan handle cut a slight groove. Place the middle of each lash at the groove and distribute them evenly around the handle. Half of the knotted lash will lie along the handle and the other half dangle from the end. Bind them to the stick with the fine cord tied in the groove. After tying, shake the lashes down in place, and start to cover the handle with the cord binding.

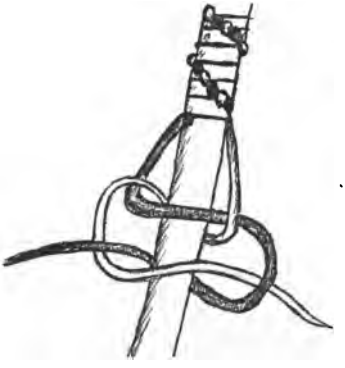


Fig. 10.

Handle: Cut the six-yard length of cord in half. Place one piece at each side of the handle, with one-inch end of each piece lying on top of the lashes and the ends pointed away from them. Bind with the fine cord. The lengths will then be in position and ready for working over the rattan. The first inch will be the most difficult, for it is necessary to work over the bound lashes. Using the stick as the foundation, pass the left-hand cord over the stick, so it lies across

it. Pass the right-hand cord over the end of the left, then under the stick and up through the loop formed by the left-hand cord (see Fig. 10). The cord will twist itself, forming the corkscrew appearance. Be careful to keep the left-hand cord on top of the stick each time, for it is upon this that the twist will depend.

The handle may be finished by holding the ends of cord in place with a gilt-head tack nailed in the end of the handle. A loop of cord or a braid may also be made for a hanger.

XIII. The Double Sailor's Knot

Materials.—Corset-laces or cord. (Number dependent on the size of the bag desired.)

This knot may be used in making various kinds of bags. Eighteen laces will make a small one. A foundation cord

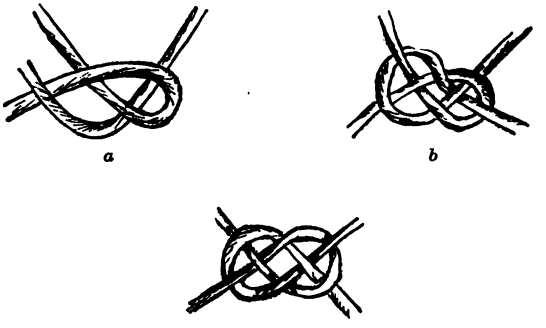


FIG. 11.

is used at the top of the bag, and each lace is doubled and looped around it (see Fig. 9).

Begin with two strands, one from each two groups. Make a loop of the left-hand one and lay it on the right-hand strand. Hold the loop in place while the right-hand end is woven over and under and through the loop of the left-hand strand (Fig. 11).

CHAPTER III

A FEW SUGGESTIONS FOR RAFFIA

No material has opened up a larger field for children's work than raffia. It is a tough, strong, yet pliable fibre, which lends itself to many charming uses. Its natural color is extremely artistic, and its properties are such that it may be readily colored in many beautiful shades by the use of vegetable dyes.

Raffia is imported from Madagascar, and is the outside covering of a native palm which grows in great abundance in that climate. The gathering and exporting of the fibre gives employment to many of the inhabitants, both men and women.

In the following chapter will be given a few of its uses, but it would be almost impossible to describe the many articles which may be fashioned from a bunch of raffia. Some persons prefer to work with raffia damp or wet, but as soaking it makes it swell, it has been found that the best results are obtained from the dry. The material works better if it is used from the large end toward the small, as the fibre grows that way, and it is not as liable to rough up.

I. Brush Broom Holder

Materials.—A piece of stiff paper, 4 x 9½ inches.—Several strands of raffia.—Tapestry needle, No. 18.—Thimble. Approximate cost per child..... .01

Fold the paper with the four-inch sides overlapping one and one-half inches at the bottom and just meeting at the top, and sew. This forms the case for the brush. Take a wide strand of raffia and tie one end around the foundation case. Begin winding at the back or pieced side. Wind over and

over, lapping the raffia carefully, until the paper is covered. The raffia will have to be pieced, as the strands are not very long; tie them together with an overhand knot and hide the knots on the inside of the case. Make a braid of raffia, using a color if possible, and sew it around the top and bottom for decoration. Put a loop of the braid at the back for a hanger. This is very simple work, and is suitable for young children.

II. Picture-Frame

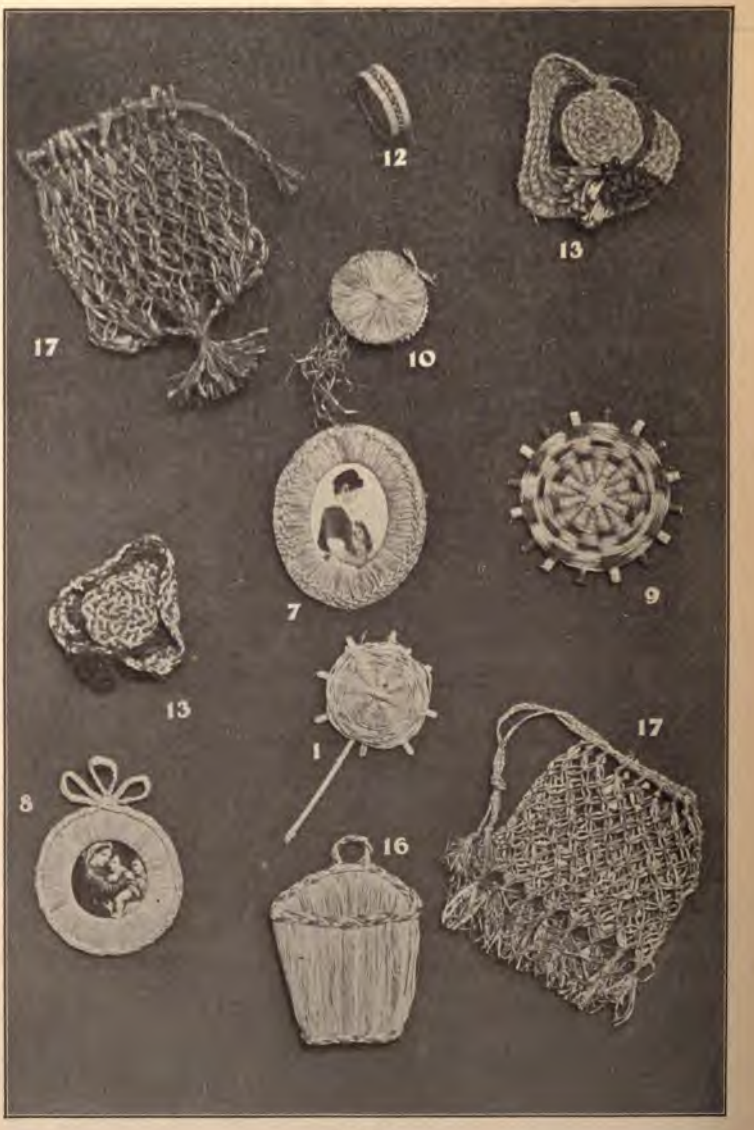
Materials.—Cardboard, round or oval.—Several strands of raffia. Approximate cost per child..... .01

Cut the cardboard the size and shape desired. From the centre cut an opening the same shape, allowing an inch or one and one-half inches for the width of the frame. The largest end of a strand of raffia is brought up through the hole and tied, the knot being placed on the wrong side. The end is then put back through the opening, and brought up through the loop formed (see Fig. 2). This is done closely all around the frame. When a new strand is needed, tie it to the old one, using an overhand or square knot. Care should be taken to keep all the knots on the wrong side of the frame. After the cardboard is filled, the edge may be further decorated by placing a fancy stitch around it, or a braid of raffia. The picture may be sewed in by the children. Raffia may be used, and a loop left for the hanger. If a neater finish is desired a piece of heavy paper may be glued or sewed on the back and a Dennison hook attached.

III. Napkin-Ring

Materials.—2 pieces of ¼-inch flat splint, 8 inches.—Several strands raffia.—Linen thread, No. 60.—Tapestry needle, No. 20.—Sloyd knives. Approximate cost per child. .01

Cut the two pieces of splint exactly the same length. Notch the ends and lap about an inch, and tie firmly with



RAFFIA

1. Umbrella.
7. Picture-frame.
8. Picture-frame.
9. Splint and raffia mat.
10. Needle-book.
12. Napkin-ring.
13. Hats.
16. Broom holder.
17. Solomon's knot bag.

the linen thread; be careful to have both circles the same size. Tie a piece of raffia to one circle and blanket-stitch, the same as the frame. Cover the other circle in like manner. In order to finish the blanket-stitch neatly, thread the finishing end into No. 20 tapestry needle, and bring the end through the first stitch. Fit the two circles together with the edge of the stitch to the outside, and catch them together, using any fancy stitch which the children know. Feather-stitch and catch-stitch lend themselves nicely to this work (see Fig. 12). The rings may also be made of a single circle, in which case use two colors and make a stitch first with one, then with the other, keeping the two ends out on the opposite sides of the splint (see Fig. 13).

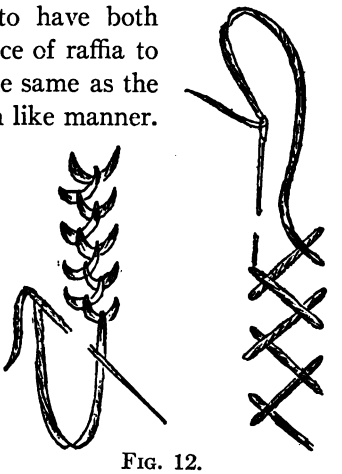


FIG. 12.

IV. Needle-Book

Materials.—2 circles of cardboard, 2½ inches in diameter.—Several strands of raffia.—2 circles of white flannel, 2 inches in diameter.—Tapestry needles, No. 19.—Thimbles. Approximate cost per child..... .01

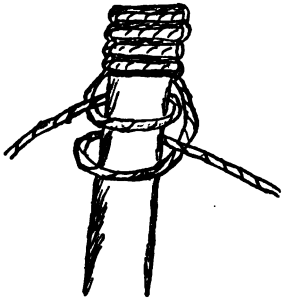


FIG. 13.

Cut the two circles from lightweight cardboard or Bristol board, and make a hole in the centre of each. Thread the needle with a strand of raffia, and bring it up through the hole in the centre; tie the end to hold it. Blanket-stitch it in the same way as the picture-

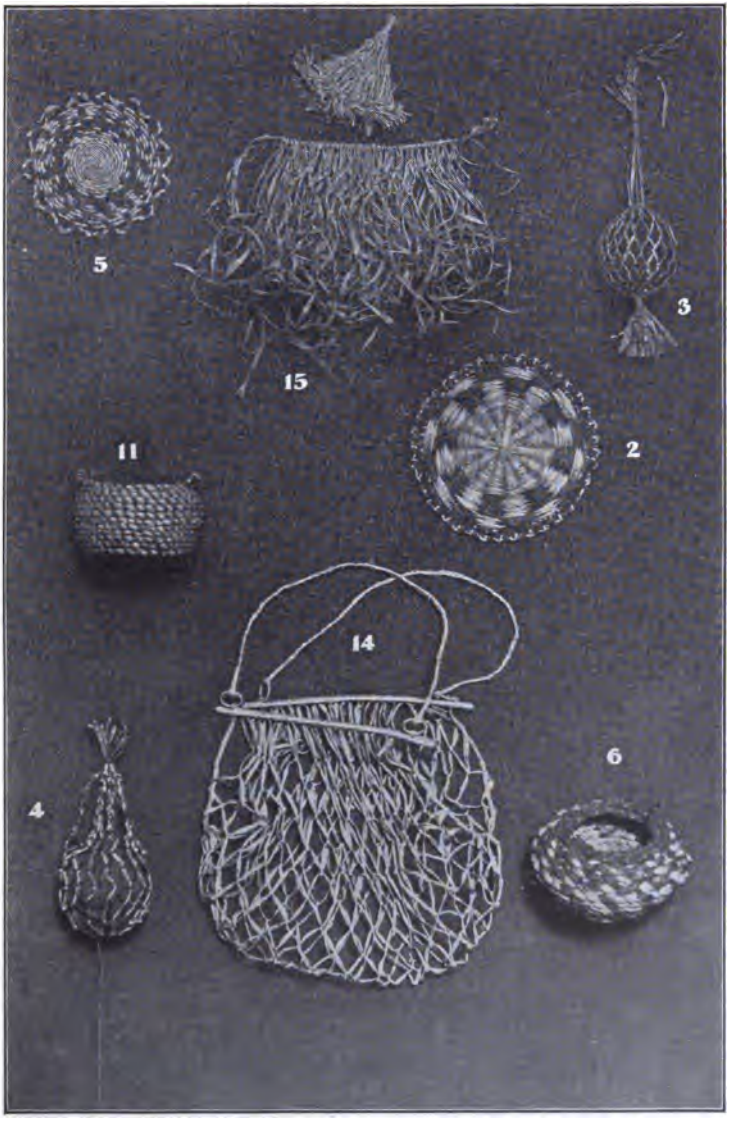
frame, using a needle to pass the raffia through the centre of the card. Blanket-stitch both circles, and fasten them together at one side, catching in leaves of flannel at the same time. These leaves may be pinked, or finished with an even or uneven blanket-stitch. Two braids for tying the book may be made of the raffia and fastened to the circles opposite where they are caught together.

V. Rain-Coat and Hat

Materials.—Raffia. Approximate cost per child..... .01

These primitive rain-coats are still worn by the coolies in some parts of Japan and other warm countries. If the children are studying primitive life, they will find the making of these little garments most interesting. The large coats are made of a sort of grass which is so thick that it serves the same purpose as a thatched roof.

Take a piece of raffia about ten inches long, and tie on thirty-two double pieces of raffia about twelve inches long. These are tied on by doubling them in the centre and putting the loop under the main piece and pulling the ends up through the loop (see Fig. 9). After these are all tied, take one strand from each pair of knots and tie them together with an overhand knot about one inch from the first row. Then tie one string from each knot together, leaving out the first and last ones. Continue this for four or five rows, forming meshes (see Hammock, in Cord Work), leaving out the first and last string each time. If the children know how to braid, a fine three-strand braid may be used in place of the foundation strand of raffia. The ends of this braid form the ties which hold the coat in place around the neck. The hat is made by taking fourteen strands of raffia and tying them together at the top to form the point of the hat. Divide into groups of two strands each. Take a piece of raffia, double it in the centre and place it around one group, bringing both ends



RAFFIA

2. Splint and raffia mat.
3. String ball.
4. String ball.
5. Braided mat.
6. Braided basket.
7. Coiled basket.
14. Shopping bag.
15. Rain coat and hat.

toward you. Take the left-hand end, bring it over the right, in front of the first group and back of the next and out; then the other end is brought over and under the next group and out in front. This is called pairing (see Fig. 14). This is done for two rows; then a new group is inserted between every three groups. Weave three rows of pairing, then leave a half-inch space; make another row of pairing, inserting a new group, between each two of the old ones. Continue pairing, spacing one-half inch apart, and taking one strand from each group and weaving them together (see Fig. 15) for three rows. The border or finish is made in the following manner: Take each group and place it under the next group to the right and up; do this all around the hat, the last group passes through the loop formed by the first. The second row is made like the first, with the exception that the groups are brought under the first group to the right, and down instead of up. Cut off the ends, leaving about one inch.

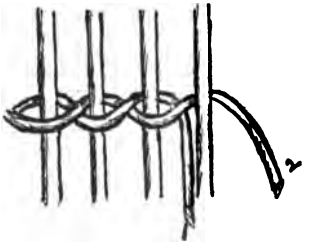


FIG. 14.

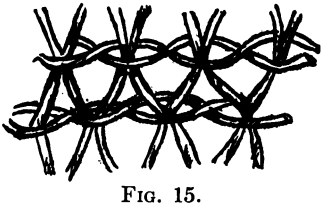


FIG. 15.

VI. Umbrella

Materials.—¼-inch flat splint, 4 pieces, 4 inches in length.—No. 2 rattan, 1 piece, 9 inches.—A few strands of raffia. Approximate cost per child..... .01

Cross the four splints in the centre (see Fig. 16). Take a strand of raffia, double it and slip it around the back splint. Use paired weaving (see Fig. 14), and when the mat is two

inches in diameter, begin to draw the weavers a little tighter to make the curve of the umbrella. Continue weaving until it is three inches in diameter. Thread the ends of the weaver into a tapestry needle and draw them into the weaving. Cut the ends of the splints in points. Take the piece of nine-inch rattan, push one end through the under centre splint. Double so that the ends meet, and wind with raffia to form the handle.

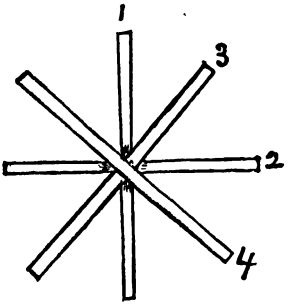


FIG. 16.

VII. Splint and Raffia Mat

Materials.—¼-inch flat splint, 8 pieces, 6 inches.—Several strands of raffia.—Tapestry needle, No. 29. Approximate cost per child..... .01

This mat is started in the same way as the umbrella. After working once around insert the four extra spokes, one at a time, between the original four (see Fig. 17). Continue with paired weaving, being careful to have the spokes succeed each other in regular order. Allow the mat to lie flat, and when within one inch of the end of the spokes fasten the weavers. Soak the ends of the splint in water for a short time to make them pliable. Turn them over and push them down into the weaving. The edge may be finished in a number of ways. Thread a tapestry needle with a

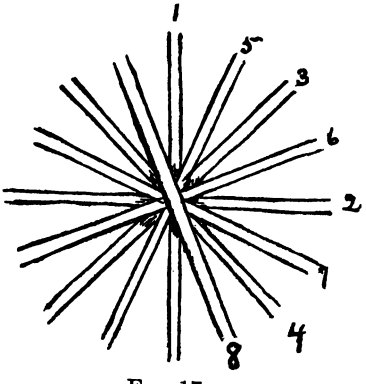


FIG. 17.

strand of raffia. Make a slanting stitch all around the edge; turn, and work the other way, crossing each stitch made in the first row. The blanket-stitch may also be used (see Fig. 2). It is well to let the children use their own ideas, as far as possible, about finishing the edge.

VIII. String Ball

Materials.—18 strands of raffia, plain and colored.—1 small brass ring.—1 ball of colored twine. Approximate cost per child ..... .06

Take nine strands of plain raffia and nine of colored. Double each strand and slip it on the ring in the same way as in making the hammock (see Fig. 9). Care should be taken to put the loop through the ring in the same direction each time, also to alternate the colors. After all the strands are looped on the ring, take one string of each color from every pair and knot together, using an overhand knot (see Fig. 18). The knots should be placed one inch from the ring. Tie all the strings together in this manner. In knotting the second row take the same colors and tie them together to form the mesh, spacing the knots about one and one-half inches below the first row. The third row should be like the first, and the fourth like the second. Care should be taken to keep the colors in stripes as it makes a much more attractive bag. Continue this until the bag is long enough to fit the ball of twine. The top of the bag may be finished in a number of ways, such as braiding the ends of the strands, and tying them together at the top with a loop for hanger. It is well to let the children use their own ideas about the finish at the top, only remember that there must be space enough left in

FIG. 18.

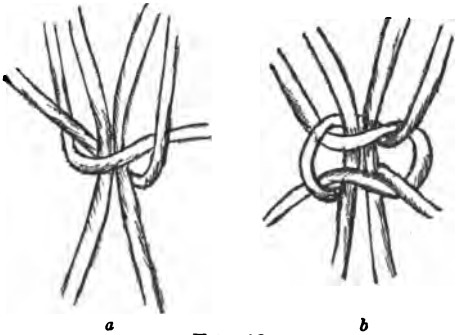
order to slip in the ball of twine. The end of the twine should come from the centre of the ball and fall through the ring at the bottom of the bag.

Another way of starting the bag is to make a stirrup (or loop) of raffia and knot the strands on this. The knots are tied in the same manner as in the first bag, but the finish is different. The strands are all fastened together at the bottom of the bag instead of at the top, and the stirrup replaced by a braid of raffia for drawing up the bag and serving as a hanger.

IX. Bag of Solomon's Knots

Materials.—Plain raffia, 17 strands.—Colored raffia, 17 strands. Approximate cost per child..... .02

The knot for this bag is a little more difficult than the preceding one, therefore it is better work for older children. Four strands are needed, two to act as the foundation cords and the other two to form the knot. Tie the thirty-four strands of raffia on to a stirrup, the same as in the string bag, two colors in each knot, making seventeen groups in all. Take two groups and bring the two inside strands together and hold them. Bring the left-hand strand down and over the foundation strands, the right-hand strand down over the end of the left hand, under the foundation and up through the loop formed by the first (see Fig. 19). This forms half of the knot. The second step is like the first, but the right-hand strand is brought down first over the



a *b*

FIG. 19.

foundation, the left-hand one down over the end of the right, under the foundation, and up through the loop. This knot is really a square knot tied over the foundation cord. A row of these knots is tied all around the bag, about one inch from the top. In the second row leave out the first two strands and take two from each group, tying them to form meshes. Space the knots about one inch apart, being careful to keep the colors in stripes. The third row is like the first. Continue with the meshes until the bag is the desired depth. Fasten together at the bottom by tying the strands from the two sides together in groups of knots, using eight instead of four. Bars may be made by tying several knots on the same foundation. A pretty finish is made by putting several knots on the same foundation, but instead of placing first the right-hand one over and then the left, using the same hand each time. This alternates the colors and makes the bar twist. Fringe out the raffia at the ends of the bars. These bars may be put in the body of the bag for decoration. Finish at the top with a braid of raffia. A little bag of silk or cotton may be placed inside and drawn up with ribbons.

X. Coiled Baskets

Materials.—Raffia, plain and colored.—Tapestry needle, No. 19.—Thimble. Approximate cost per child... .02

Take enough strands of raffia to make a coil about the size of the finger. Begin at the large end and wind with a strand of colored raffia, spacing about one-half inch apart. When the coil begins to get small add new strands to keep the size uniform. To piece the colored raffia tie the new strand to the old with an overhand knot, winding down the ends to make it as neat as possible. Have the children wind two or three yards and then tie the end of the winding strand to hold it in place before beginning to sew. Thread a piece of the plain raffia in the tapestry needle. Start from the large end of the

coil, curve it around in as small a circle as possible, and fasten with two or three stitches (see Fig. 20*a*). Begin sewing with the pointed stitch (see Fig. 20*b*) taking it through the old coil into the new. The basket may be made in any shape. It is well to have the children draw a design of it before they start work. The shaping depends on the angle at which the coil is laid. In finishing, the end is sewed down on the inside of the basket, or brought over the top to the opposite side to form a handle. This basket is very simple, easy work, and is suitable for young children.

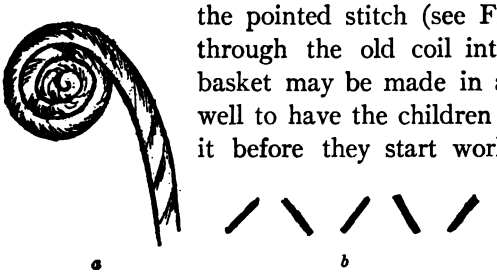


FIG. 20.

XI. Braided Basket

Materials.—Raffia.—Tapestry needle, No. 19.—Thimble.
Approximate cost per child..... .02

Three-strand braiding has been described in the chapter on Cord Work under "Ties for Sailor Suits." Raffia braided in this style lends itself to many attractive articles. A three-strand braid is made, using three or four pieces of raffia in each strand of the braid. As the raffia is not the same size the whole of its length, it is necessary to piece it when it becomes thin. This is done by laying in a new strand where the old one is growing thin and braiding it in. After the braid is finished, these rough ends may be clipped off. Make about five yards of braid and then begin the sewing. Thread the tapestry needle with a strand of raffia, wind the beginning of the braid several times and take one stitch through to fasten it. Begin coiling, in the same way as in the first basket described, holding the braid on edge instead of flat. Take several stitches through to hold it firmly; then sew with

the same pointed stitch as described under the coiled basket. Keep the braid on edge, and continue until the bottom is about three inches in diameter. Begin building up the sides by laying each row outside of the former one, and lapping to about the centre. These braids will also have to be held at an angle to the bottom to make the sides flare as they should. When within three or four inches of the top a pattern may be introduced in the following manner: Make one strand of the braid of colored raffia, and continue braiding until you have enough for three rows around the basket; then make two strands of color for three rows more, then the whole braid of color for three rows. This decoration may be put in the centre of the basket in the same way, if desired.

The finish at the top is made by sewing down the end of the braid firmly on the inside.

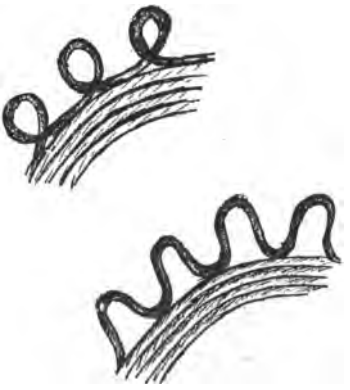


FIG. 21.

XII. Braided Mat

Materials.—Raffia, plain and colored.—Tapestry needle, No. 19.—Thimble. Approximate cost per child ..... .02

The principle of the mat is the same as in the preceding basket. Make a three-strand braid, using plain and colored raffia, with two pieces in each strand of the braid. Start it in the same way as the braided basket, holding the braid on edge, and sew until the mat is the size desired, four or five inches in diameter. Then make the border around the edge, forming the braid in points or rings (see Fig. 21). This mat will take from five to eight yards of braiding, according to size. Finish by sewing the end down firmly on the under side.

XIII. Doll's Hat

Materials.—Raffia, plain and colored.—Tapestry needle, No. 19.—Thimble. Approximate cost per child..... .02

A four- or five-strand braid may be used for this, or, if given to young children, one of three strands. Four-strand braids are made in much the same as one of three, with the exception that one outside strand goes over the next and to the centre, and the other outside one under the next and to the centre. This principle holds with all even-numbered braiding, while in the uneven the outside strands always go over the next and toward the centre. If one keeps in mind the principle of weaving, braiding with any number of strands will be comparatively easy. The little hat is started the same as the basket, but the braid is laid flat instead of on the side. Form the top of the crown first, then the side crown by placing the braid at right angles to the top. The brim is made by placing the braid at right angles to the side crown. The children should have an idea of what shape they are to make the hat, and what the size of the crown is to be, before they start sewing. The trimming may be done with colored raffia or ribbon. These hats take about five yards of braid. Hats for the children may be made in the same manner; they take about one pound of raffia, and require about twelve yards of braid.

XIV. Shopping-Bag

Materials.—A bunch of raffia.—Rattan, No. 4, 2 pieces, 15 inches.—Brass rings, 2.—Netting-needle.—Mesh-stick.—Approximate cost per child..... .02

This work will be found too difficult for young children, but is interesting to boys and girls of ten or twelve.

The first step is to wind the netting-needle. Tie fifteen or more strands of raffia together to form long strings. Try

to select strands that are of an even size. Begin to wind, holding the end with the thumb until it is fastened down. The raffia is brought around one of the points at the bottom, and carried up to the tongue at the top, where it is passed around it in the opposite direction from where it started. If it starts on the left-hand side of the needle, it passes around the tongue from right to left, so that each winding crosses the preceding one. Fill the needle as full as possible. Make a stirrup of raffia and tie the end from the netting-needle to it with an overhand knot about one inch from the stirrup. Hold the mesh-stick in the left hand between the thumb and first finger (see Fig. 22), and the needle in the right hand. Bring the raffia over the mesh-stick, around it and up through the loop of the stirrup. Carry it down to the stick again, and hold it with the thumb. Throw the raffia to the left and bring the needle up through the loop formed (see Fig. 22). Cast on fourteen stitches in this way. Slip out the mesh-stick, turn the work over, and begin the second row. This is made like the first, the needle passing up through the loops formed by the first row of stitches. Care must be taken to tie the knot over the loop and not to let it slip below, as the netting will not then be firm (see Fig. 22). Make nineteen rows of netting, fasten the end and take out the stirrup.

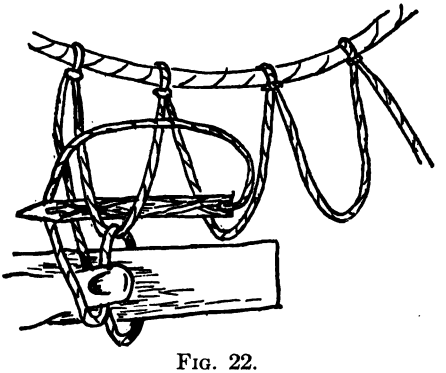


FIG. 22.

Bend the two pieces of rattan with the ends meeting in the centre. Braid two three-strand braids eleven inches long and run them through the meshes in order to draw up the bag at

the sides. Blanket-stitch the rings. Wind one curved end of rattan with raffia for about an inch. Insert the end of the braid which has been put through one ring between the two pieces, and wind down. Wind over the double rattan, keeping it flat, and catch in each loop of the netting at regular intervals. When one inch from the other end put in the second braid and ring and wind to the end of the rattan. The end of raffia is fastened by running it into the winding. Run the long end of the braid through the loops at the side of the netting and finish the other end of the bag in the same way as the first. The handles are made of heavy three-strand braids about eight inches long. These are fastened into the rings in the same manner as the strings of the hammock are bound (see Hammock, Chapter II). This same netting may be done with cord and made into a number of articles, such as butterfly-nets, school-bags, etc.

CHAPTER IV

COARSE SEWING

COARSE sewing has been introduced into some of the grade schools as one of the forms of manual training. Educators have realized for some time that the fine sewing and finely pricked cards of former years were not suited to the adjustments which it is possible for young children in the kindergarten and early grades to make. In the study of primitive races, one notices the crudity of their early tools and efforts. Children in the same way, in learning the early control of their muscles, will begin in a very crude manner and will have much difficulty in using tools.

The cardboard sewing of a very simple character may precede the canvas work. Scope should be given for creative thought in the decoration of the work and in planning for its use. Color, design, and the relation of line to space are incidentally taught. The fact that it is of use and finds a place in the life and thought of the child should be its excuse for being—if an excuse were necessary. Kindergarten cards may be used for this purpose or, if large articles are to be made, the Bristol board may be purchased by the sheet. In the cardboard sewing, the teacher should aim to have the designs carried out in long stitches.

For the canvas work, burlap, basket burlap, Java canvas or burlap canvas may be used, the burlap being the most inexpensive material for large classes. In the canvas work the children learn easily the form of the stitches which in later years are applied in the fine sewing. There is also much

scope in this work for the teaching of harmony of color and design.

Raffia, either in plain or color, makes an inexpensive and effective material for decoration. Germantown wool or Poseidon cotton may also be used. San silk materially reduces the cost, but is not so attractive.

CARDBOARD SEWING

I. Pen-wiper

Materials.—Kindergarten cards, 5 x 5 inches.—Wool or Poseidon cotton, ½ skein.—Tapestry needles, No. 19 or No. 20.—Pricking-pad and needle.—Chamois or flannel, 4 x 4 inches. Approximate cost per child..... .01

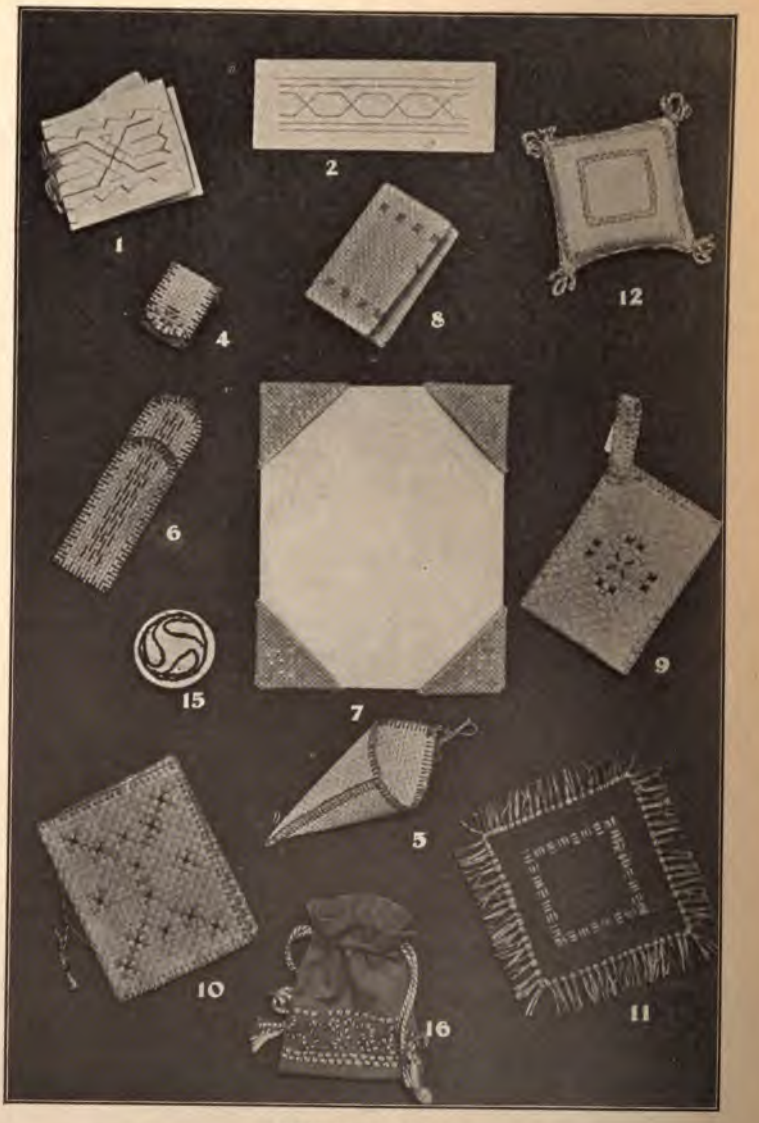
Have a pattern pricked on the cards, the simpler the better. Begin with a knot and join the holes with long stitches; if the pattern can be followed on the back and face of the card, the work is more satisfactory. Work two cards alike, and join them together at one side, placing two leaves of chamois between. As far as possible let the children use their own ideas about fastening.

Needle-books may be made in the same manner, by placing two leaves of pinked flannel between in place of chamois. The size of the cards may vary.

II. Blotter

Materials.—Bristol board.—Wool or Poseidon cotton, ½ skein.—Tapestry needles, No. 19 or No. 20.—Pricking-pad and needle.—Blotting-paper. Approximate cost per child..... .02

After a simple pattern has been pricked on the card, it may be sewed in a manner similar to the pen-wiper. Place the blotting-paper, which is of the same size as the card, under it, and sew at the corners with a small cross-stitch.



COARSE SEWING

1. Needle-book.
2. Blotter.
4. Napkin-ring.
5. Hair-receiver.
6. Pencil-case.
7. Blotter corners.
8. Letter-case.
9. Iron-holder
10. Book-cover.
11. Table-cover.
15. Pin-ball.
16. Bag.

III. Match-scratcher

Materials.—Kindergarten cards, 5 x 5 inches.—Wool or Poseidon cotton, ½ skein.—Tapestry needles, No. 19 or No. 20.—Pricking-pad and needle.—Sand-paper, 2 x 3 inches. Approximate cost per child..... .01

The design for the match-scratcher may be made on the upper part of the card, then pricked and sewed. Glue the sand-paper on the lower portion so that it is in the right relation to the space above.

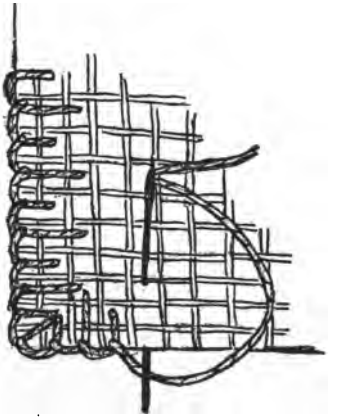


FIG. 23.

IV. Napkin-Ring

Materials. — Burlap canvas, 8 x 2 inches.—Wool or Poseidon cotton, ⅛ skein. —Thimbles.—Needles.—Tapestry, No. 19 or No. 20. Approximate cost per child ..... .01

Round evenly one end of the strip: this will be the lap in the finished ring. With an irregular blanket-stitch (see Fig. 23) work around all four sides to prevent it from fraying. Lap the round end over the square about one inch and sew through the two thicknesses with a decorative stitch. The initial of the child makes an interesting finish and serves as a means of distinguishing one from another at table.

V. Hair-Receiver

Materials.—Burlap canvas, 5½ x 5½ inches.—Poseidon cotton, ½ skein.—Needles, tapestry, No. 19 or No. 20.—Thimbles. Approximate cost per child..... .02

Carefully blanket-stitch three sides of the square (see Fig. 24). Fold the side next to the unfinished side over the rough

edge and tack in three or four places with small stitches. A loop of the cotton may be put through the pointed top and tied in a small bow. This serves as a hanger.

VI. Pencil-Case

Materials.—Burlap canvas, 13 x 2¼ inches.—Poseidon cotton, ⅓ skein.—Needles, tapestry, No. 19 or No. 20.—Thimbles. Approximate cost per child..... .02

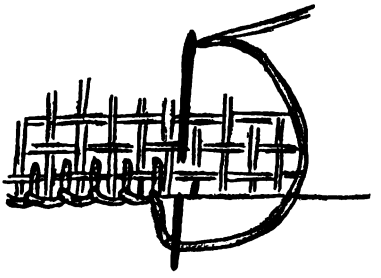


FIG. 24.

Round evenly both ends of the strip. Fold one round end over to within two inches of the other. Pin carefully and blanket-stitch the edges. A simple running stitch (see Fig. 25) may be used as ornamentation through the middle of the case, but must be put on before the material is folded. If the running stitch is taken through the two thicknesses, it will divide the case for two pencils. If no division is made, the case may be used as a tooth-brush holder.

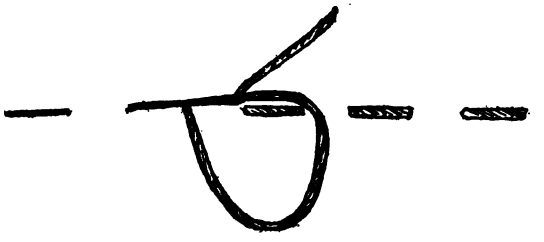


FIG. 25.

VII. Blotter-Corners

Materials.—4 pieces of burlap canvas, 4¼ x 2¼ inches.—Poseidon cotton, ½ skein. Approximate cost per child. .02

Blanket-stitch the four sides of the strip (see Fig. 24).

Fold the ends together to meet the long side, thus forming a tent shape. Within this triangle, which will appear on the upper side of the blotter, make some simple ornamentation with the cross-stitch (see Fig. 26). This can be done before the ends are tacked together on the under side. Slip the canvas on the corners of a large blotter and tack.

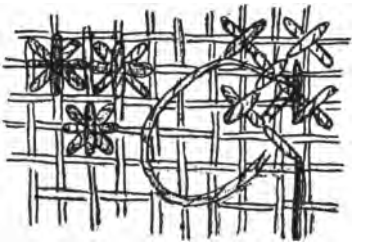


FIG. 26.

VIII. Letter-Case

Materials.—Burlap canvas, 6½ x 15 inches.—Poseidon cotton, 1½ skeins.—Crewel needle, No. 1 or No. 2.—Thimbles. Approximate cost per child..... .08

Decide on a decoration which may take the form of a border across the ends or around the whole case (see Fig. 27). Use the cross-stitch and the running or back stitching in combination. Put an even or uneven blanket-stitch across the ends (see Figs. 23 and 24). Fold the ends to within one-half inch of the centre, pin, and blanket-stitch the sides through the two thicknesses. Finish with a cord and tassel made of Poseidon cotton tied on at the centre.

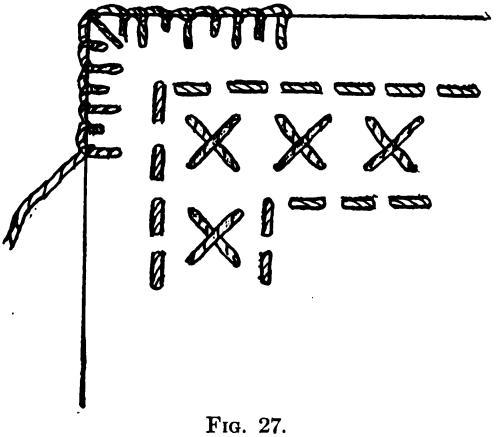


FIG. 27.

Cord.—This is made by taking two strands of cotton and twisting them. Let two children work together, one twisting each way, double this cord in the centre, and twist together. Place a knot one inch from each end and fringe.

IX. Iron-Holder

Materials.—Basket burlap, 12 x 4 inches and 6 x 1 inches.—Poseidon cotton, 1 skein.—Crewel needle, No. 2.—Thimble. Approximate cost per child..... .04

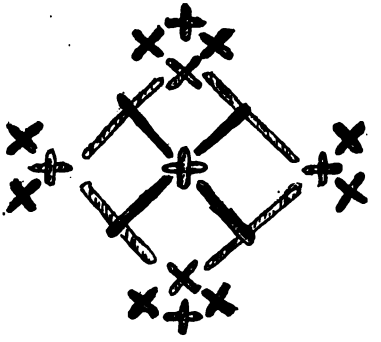


Fig. 28.

Place the design in cross-stitch about two inches down from each end of the twelve-inch strip (see Fig. 28). Two colors may be used effectively. Finish the four-inch ends with an uneven blanket-stitch, fold them together evenly and continue the stitch at the sides. Finish the edges of the narrow strip in like manner, double and fasten it at the upper left corner for the hanger. Slip a piece of thin asbestos inside the case.

X. Book-Cover

Materials.—Basket burlap, 6½ x 10½ inches.—Poseidon cotton, 2 skeins.—Crewel needles, No. 2. Approximate cost per child ..... .07

Fold the burlap to find the centre of the longest side; this will form the front of the cover. Place a simple design in the centre, using the cross-stitch (see Fig. 26), or a border made with a combination of the running-stitch, cross-stitch or back-stitch. Letters may also be used worked with cross-

stitch. Finish the edge with an even blanket-stitch, and tie in several sheets of paper to form the leaves, using a cord and tassels. These books may be used for notes, recipes, scrap-books, etc.

Magazine-covers may be made in the same way. Find the dimensions and place one one and one-half inch strip of canvas, finished at the edge with the blanket-stitch, at each end of the cover on the wrong side, and one and one-half inches in from each end. This will hold the cover of the magazine.

XI. Doll's Table-Cover

Materials.—Java canvas, 6 x 6 inches.—Raffia, plain or colored, 5 strands.—Crewel needles, No. 1.—Thimbles. Approximate cost per child..... .02

The decorations on this article may be made with long stitches arranged systematically to form a line design. A border may be used, or the whole centre filled with decoration. The edge may be finished by turning up one-quarter of an inch and blanket-stitching, or by tying in a fringe.

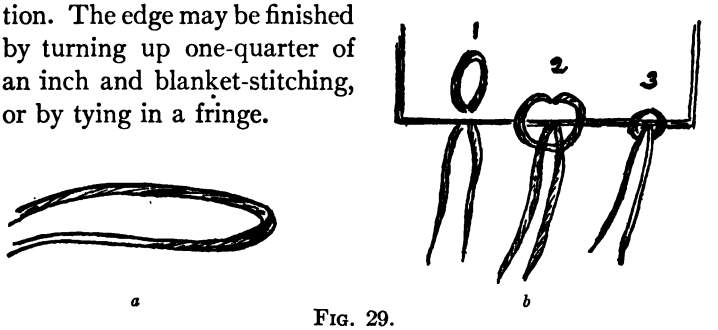


FIG. 29.

Fringe.—Wind silk or raffia around a card, one and one-half inches wide, a number of times; cut through at one edge. In order to tie into the table-cover, use a small crochet-hook or a tapestry needle, No. 19; double each strand; pull the loop through the edge (see Fig. 29), and draw the ends through the loop.

XII. Pillow for Doll's House

Materials.—2 pieces Java canvas, 6 x 6 inches.—Crewel needles, No. 1.—Cotton batting.—Thimble. Approximate cost per child..... .03

The decoration may be placed in the centre of the cushion or form a border around the edge. If it is to fill the centre, divide the square in quarters, either on the straight or the diagonal; this gives a centre to work from, and the spaces are to be filled with the repeat.

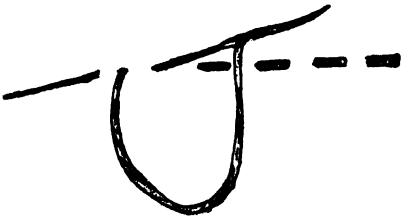


Fig. 30.

Two or more colors may be used effectively in this decoration. After the design is worked, which should be done with long, straight stitches, lay the two squares face together and sew around three sides, one-quarter of an inch from the edge, using two runs and a back-stitch (Fig. 30). Turn it right side out and stuff with cotton. Be careful to fill the corners well. Turn in the edges of the opening and run or overhand them together (Fig. 31). Finish the edge with cord or a braid of raffia.

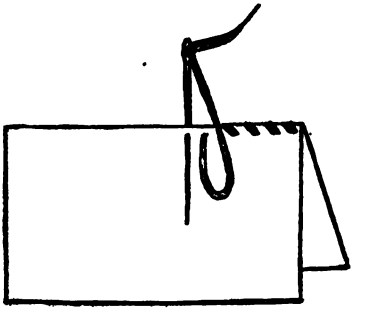


Fig. 31.

XIII. Iron-holder

Materials.—Denim, 5 x 5 inches.—Interlining, 4 x 4 inches. San silk.—Crewel needle, No. 2.—Thimble. Approximate cost per child..... .02

Fold the interlining until it is four inches square. Fold a one-half inch turning around both pieces of denim, taking care to fold the opposite sides of the square first and then the remaining sides. Fit together at the corners by slipping the turnings under each other (they will lie much flatter). Baste the two sides, put in the interlining, and continue basting around the holder. Finish the edge with an overcasting stitch done in San silk (see Fig. 32), first one way all around and then cross each stitch, working in the opposite direction. Put a large cross or star in the centre; this will make a decoration and will also serve to hold the interlining. The legs of old stockings make excellent interlining for holders; fold them flat, the size required, and turn the end over to hold them. A loop of braid or tape may be added to one corner of the holder for a hanger; or a longer piece may be sewed on, with a safety pin in the other end to fasten it to the belt while in use.

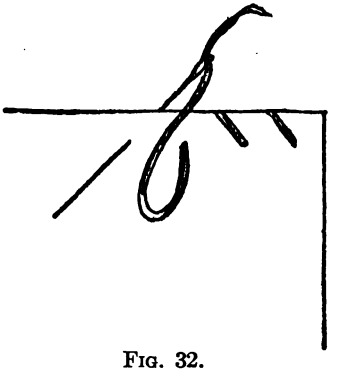


FIG. 32.

XIV. Bean-Bag

Materials.—Denim, 5 x 10 inches.—Colored cotton, No. 50.—Needle, No. 7.—Beans. Approximate cost per child. .02

Fold the denim to form a square with the right sides together and baste carefully around three sides. Sew two

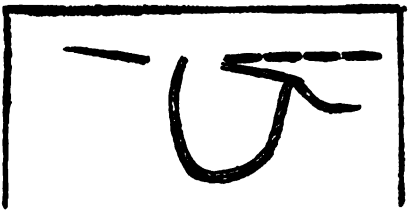


FIG. 33.

sides and half of the third, using a back-stitch (see Fig. 33) one-quarter of an inch from the edge. Turn inside out, being careful to make square corners. Fill with the beans; turn in the edge of the opening, baste, and sew, using an overhand stitch (see Fig. 31).

XV. Pin-Ball

Materials.—2 cardboard circles, $2\frac{3}{4}$ inches in diameter.—2 circles of denim, $3\frac{1}{2}$ inches in diameter.—Poseidon cotton, $\frac{1}{4}$ skein. Approximate cost per child..... .01

On one piece of denim sketch some pleasing design, and place it well in the centre. This may be outlined by couching with a thread of contrasting color (see Fig. 34). Couching is done by holding a heavy cord (as Poseidon) over the line of design and sewing it down with straight stitches of a finer silk; the stitches to be taken about one-eighth of an inch apart. Make a row of running stitches one-eighth of an inch from the edge of the denim, slip in the circles of cardboard and draw up the thread. Catch firmly with long stitches back and forth. Gather the edge of the other circle in a similar way over the cardboard. The two circles may be joined together back to back by holding a thread of Poseidon around the edge and overhanding it (see Fig. 31), or by simply overhanding the two together.

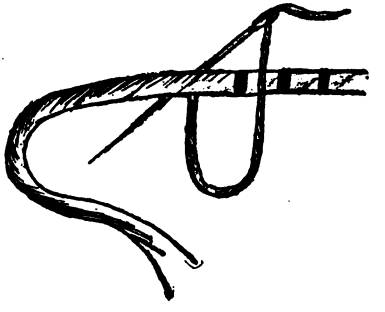


FIG. 34.

XVI. Denim Bag

Materials.—Denim, 16 x 5½ inches. Heavy mercerized cotton, ¼ skein.—Needles.—Thimbles.—40 cotton. Approximate cost per child..... .04

Double the strip so that the two right sides are together. There will be no seam at the bottom of the bag. Seam the sides to within three inches of the top. Use a combination stitch of two runs and a back stitch (see Fig. 30). At each end, turn down one and three-quarter inches on the right side of the bag. Seam down each side for one and one-half inches—same width as used in the long seam of the bag. Turn this over to the wrong side. Turn under one-quarter of an inch and hem down. One-quarter of an inch above this hem, on both sides of the bag, make a running stitch for the casing.

If the bag is to be ornamented, it must be done before it is seamed at the sides. The design should be very simple. Sketch it on paper, cut it out and paste it on an extra piece of denim. Cut out the denim according to design and baste this on the bag. The paper will be between the two pieces of denim. Take heavy mercerized cotton and lay around the design, couching it down with a different color (see Fig. 34). In putting in the draw-string at the top, begin at one side, run the cord through the casing all the way around to where it was started. In starting the other string, begin at the opposite side and run it around in the other direction to the first string. Draw up the cords and sew or tie the ends together.

The bags may be used for work-bags, marbles, or, if larger in size, for skates.

CHAPTER V

PAPER CUTTING AND FOLDING

PAPER cutting and folding are other forms of handwork which may be used in many delightful ways at home, or in the school-room in connection with other studies. It is closely allied to drawing and cultivates alertness and powers of observation, especially when the cutting is free-hand work.

Many forms of symmetry and life may be made with the kindergarten folding papers, and are of deep interest to the children. As the fingers grow in strength, a heavier paper or cardboard may be used for the construction work. Plain cartridge wall-paper is inexpensive and can be used advantageously in large classes. Bogus paper and even newspapers may be utilized in a similar way.

In lessons in folding, the children must learn to follow the directions given in a quick, accurate way.

For the work in cutting or silhouetting plain black or white paper is the best. Kindergarten papers 4 x 4 inches may be bought in all colors and are best adapted for the conventional designs. These may be mounted on the tops of boxes and other articles as a decoration, or used in stencil work, as explained in the following chapter. With young children it is preferable to use blunt-pointed scissors and inexpensive paper.

The following outlines may be suggestive of much that may be worked out in relation to the other class-room work. It may be a foundation for later work in more difficult construction.

PAPER CUTTING

1. Accordion.
2. Paper dolls.
3. Stencil.
4. Free-hand cutting.
5. Free-hand cutting.
6. Paper tearing.

I. A Simple Transparency

Materials.—Gray card, 4 x 5 inches.—Yellow tissue paper, 4 x 5 inches.—Poseidon or cord, ¼ yard. Approximate cost per child..... .01

Have the children draw a picture of a crescent moon and a star (see Fig. 35). If the unglazed card is used, draw at once upon it, as mistakes are easily erased; otherwise, the sketch may first be made upon a slip of paper. Cut on the line sketched and remove the moon and star. These may be pasted on another card if cut away without being torn. On the other side paste the yellow tissue paper and make two holes at the top for the cord. This transparency may be hung in the window.

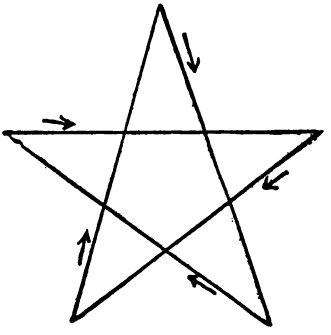


FIG. 35.

Any other designs may be cut from the card in a similar way.

II. Paper Accordion

Materials.—2 strips of paper, 2 yards x 1½ inches.

The paper accordions afford a great deal of amusement to very young children. They may be made of newspaper or any scraps of colored paper—red, white, and blue are especially pleasing. If made of the colors, the strips must be pasted together first, so that the accordion is started with two long pieces one and one-half inches wide. Lap strip *a* on strip *b* (see Fig. 36), so that a square is formed at *c*. The ac-

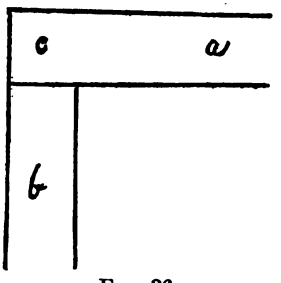


FIG. 36.

cordion is built up on this square. Fold *b* over *a* on the square *c*, fold *a* over *b;* continue until the strips have all been folded.

If made of color, the accordions are a pleasing Christmas-tree decoration. They may be made of strips of any width, and any number of yards may be put in each. For young children do not cut the strips too narrow.

III. Pin-Wheel

Materials.—1 square of paper, 5 x 5 inches.—1 ¼ inch dowel-stick, 8 inches.

Find the centre of the paper and place a dot. Fold the square corner to corner, both ways, to crease the diagonals. Cut on these lines from each corner of the square to within half an inch of the centre (see Fig. 37). After cutting, there will be eight points, two at each corner of the square. Every other point is to be lapped over the centre and the pin put through the five thicknesses. A small square of paper of another color may be put on before the pin is put through the pin-wheel and pressed into the end of the stick.

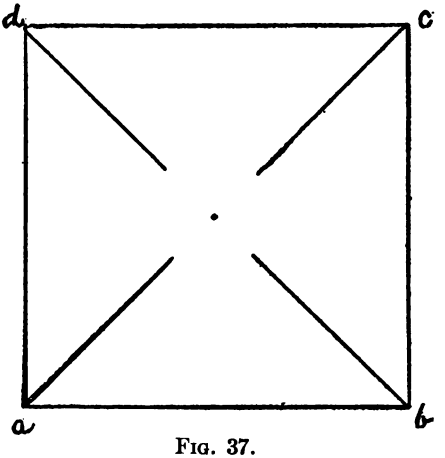


Fig. 37.

Pin-wheels may be made of two thicknesses of paper and of two colors; they are then cut together and one color forms the lining. They run better when made in this way.

IV. Paper Dolls

Materials.—1 strip of paper, 1 yard by 4 inches.

Fold the paper so that the two short edges will lie together. This will make the strip half a yard in length, but of two thicknesses. Fold again in a similar way, making four thicknesses. Continue until the strip is folded to about a width of one and one-half inches. With the scissors cut in a free way the outline of the doll; if necessary, sketch it before cutting (see Fig. 38). Care must be taken not to cut through the folds at *a* and *b* of the sketch, as the dolls will not be joined if the folds are cut.

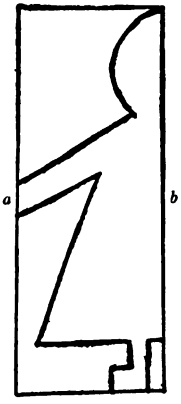


FIG. 38.

The father doll and children may also be made in a similar way. Animals make an interesting variation (see Plate V, No. 6).

V. Designs for Stencils

Materials.—Strips of heavy paraffine or oiled paper.

Plate V, No. 3, shows a stencil which has been made from a strip of paper three by ten inches. Ordinary heavy brown paper may be used if no oiled paper is available. Fold in the same manner as the strip for the paper dolls, and cut the design free-hand. It is impossible to determine before cutting what the design is to be, and the surprises when the strip is unfolded are often very satisfactory.

The stencil may be used as a strip where a repetition of units is desired, or one unit may be cut away and used in the decoration of objects. India-ink or water-colors may be used with the stencil on the gray mat paper.

Mats, sofa-cushions, screens, curtains, etc., may be decorated by use of the stencil with paints or dyes.

VI. Free Cutting of Conventional Designs

Materials.—Squares of paper of any color.

Place the square on the table so that it lies with the corner toward you. Turn the corner nearest you until it lies on the one opposite. *a–b* is the folded edge toward you (see Fig. 39). Fold again so that point *b* lies on *a*. The triangle is then pre-

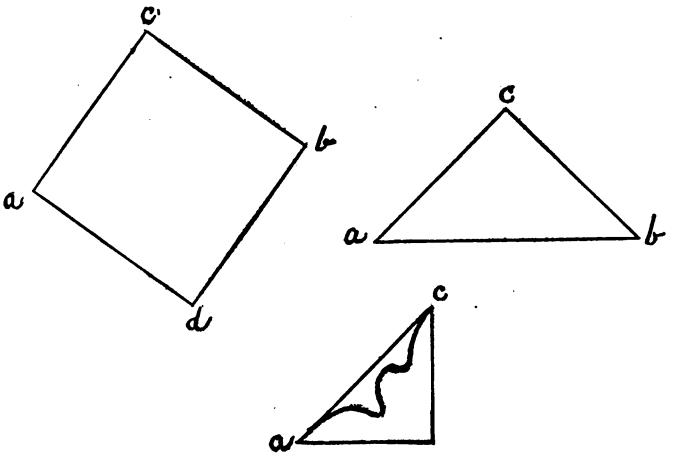


FIG. 39.

pared for cutting; this may be done in any free way. Plate VI, No. 3, shows several results of this conventional cutting. The pieces cut may be used in the decoration of boxes or other objects.

VII. Free Cutting or Tearing of Objects

Materials.—White or black paper.

Either the glazed or unglazed paper may be used for this purpose. The object to be copied may be placed before the children, or free range given to the imagination if objects are

not available. No directions should be given, as they should be allowed to cut or tear in a free way. Astonishing results are often obtained. Single objects or scenes may be portrayed, and profiles of friends and classmates made *en silhouette*. This work is interesting to the older children, and the results are very pleasing (see Plate V, No. 6).

VIII. Picture-Frame

Materials.—1 square of paper, 8 x 8 inches.—3 pieces of Poseidon or ribbon, 6 inches each.—1 piece of Poseidon, 10 inches.

Find the centre of the paper and fold all four corners until they meet at that centre (see Fig. 40 *a–b*). Fold the same corners back to the side of square first formed.

Holes may be punched through the double thicknesses

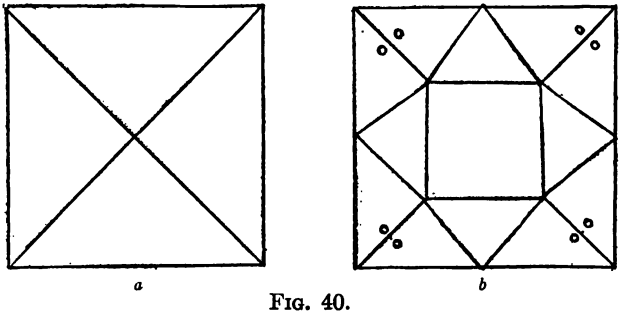


FIG. 40.

and small bows tied in three corners (see Plate VI, No. 4). The longest ribbon is used for the hanger at the fourth corner.

Wall-paper, if it is a plain color, cartridge, or bogus paper may be used for folding.

IX. Newspaper-Holder or Wall-Pocket

Materials.—1 square of cardboard, 8 x 8 inches.—1 piece of Poseidon or ribbon, 8 inches.—1 piece of Poseidon or ribbon, 10 inches.

One inch from the two opposite corners *a* and *b* make holes with a punch or scissors (see Fig. 41-1). Fold *a* and *b* until the holes lie on top of each other. Tie the eight-inch piece of ribbon through the two holes and around the card to hold it securely in place (see Fig. 41-2). At *c* and *d* of sketch 2, make holes through the two thicknesses and put the ten-inch ribbon through for a hanger (see Plate VI, No. 5).

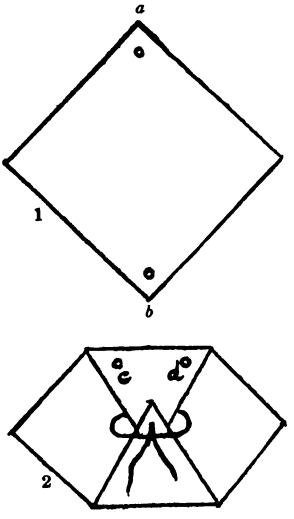


FIG. 41.

X. Office-Card

Materials.—1 gray card, 8 x 8 inches.—2 pieces white cardboard, 6 x 1¼ inches.

Four slits are to be cut in the square card to enable the free passage of the white cardboard strips. From the upper right-hand corner measure down one and three-quarter inches and place a dot. Measure in from the dot to the edge of the paper two and one-half inches and place another dot; from this dot cut with a penknife, using a ruler for guide, a slit one and three-eighths inches long and parallel to the edge of the card. Two inches below the end of this slit cut another, one and three-eighths inches long, and also parallel to the edge. Three inches to the left of both slits cut two more, exactly parallel to them and two and one-half inches from the left-hand edge.

The words "In" and "Out" are to be printed in the middle of the white strips, and the strips turned, as occasion demands. This makes a useful article to hang in the hallway. It is possible to have the name of the person using it printed above the upper strip or between the two. Make two holes at the top for the ribbon hanger.

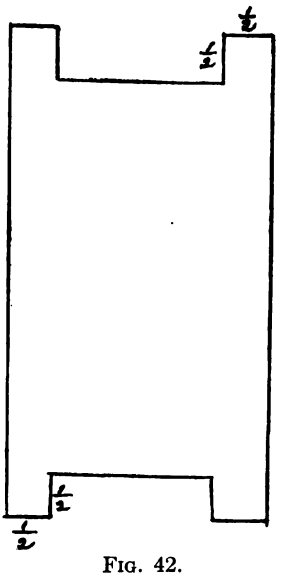


FIG. 42.

XI. Screen for Doll's House

Materials.—Gray mounting paper, 6 x 9 inches.

Divide the oblong into three sections of three by six inches. Rule the division lines lightly, lengthwise of the cardboard. With a horseshoe-nail score the cardboard, using a ruler for guide; bend and fold in thirds. At the bottom and top of each section, remove a piece of cardboard, two by one-half inches to make the feet and finish for the top of the screen. In order to do so accurately, measure in from each edge one-half an inch and down one-half an inch and cut out (see Fig. 42).

The screen may be decorated with the stencilled design, or left perfectly plain.

XII. Envelopes

Materials.—Cartridge paper, or any suitable kind for fancy or plain envelopes.

The envelopes may be made of any dimension, according to the size desired. For note-paper and the children's use in

class, have them cut the paper six by eight inches and divide it into two-inch squares. Rule lightly, so that the lines may not show on the finished envelope.

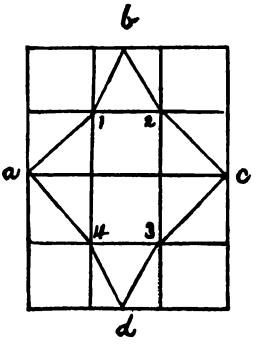


FIG. 43.

Remove the four corner squares (see Fig. 43). Draw lines connecting point *b* with 1 and 2, *a* with 1 and 4, *c* with 2 and 3, *d* with 3 and 4. Cut out the envelope on the lines just drawn. Fold down the two sharp points *b* and *d*. Point *a* is folded over them and glued where the two edges cover each other, the fourth side is for sealing.

XIII. Square Box with Cover

Materials.—Gray cardboard.—1 4-inch sheet of colored kindergarten paper.

Draw a three and one-half inch square. From each corner continue the lines one and one-half inches. Connect the lines drawn to form the sides of the box. After it is cut, it is to be folded into shape, but some allowance must be made for pasting the corners before the outline of the box is cut (see Fig. 44). In every corner make an allowance of one-quarter of an inch according to the dotted lines. Cut out the box with care, especially where the allowance has been

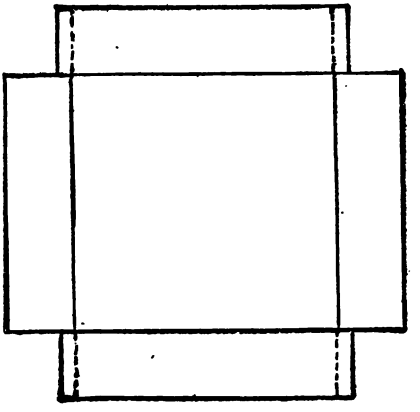


FIG. 44.

made for the turnings. Score, fold into shape, and glue the corners.

Cover.—Draw a square three and three-quarter inches. Continue the lines from the corner one inch in both directions. Connect the lines to form the sides of the cover (see Fig. 44). Make the corner allowances for pasting, the same as the bottom of the box.

The cover may be decorated with the sheet of kindergarten paper. Fold it as described under Conventional Cutting, and make a free-hand form.

XIV. Lamp or Candle Shade, No. 1

Materials.—Gray cardboard.—3 yards of Poseidon or baby ribbon.

This shade is composed of five pieces of similar shape, tied together. One piece must be drawn according to dimensions, and the others cut the same size.

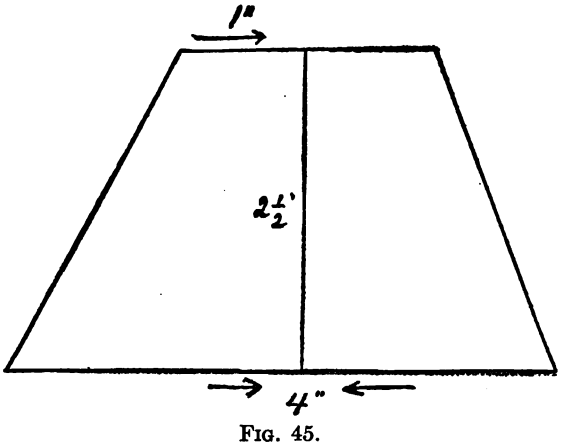


FIG. 45.

Draw a line four inches long and bisect it. From the point of bisection erect a perpendicular line two and one-half inches long. On each side of the perpendicular draw a line one inch

in length and parallel to the four-inch line. Connect the ends of the four-inch line with the ends of the line drawn parallel to it (see Fig. 45). Cut out the form and make four other pieces like it. Sketch the same simple design on all. After drawing the design, the outline may be pricked with a pin and the portion of cardboard inside the outline perforated with pinholes. Use a large pin and have the rough side of the pricking for the outside—in other words, prick from the inside toward the outside. The perforations allow the light to shine through. In each angle of all five pieces make a hole with a punch and tie them into shape. The four-inch sides of the forms make the bottom of the shade.

XV. Lamp Shade, No. 2

Materials.—Cardboard.—Rice paper.—India-ink.

This shade is made up of four sides, and a portion of each is cut away and rice paper used for the transparency.

Draw an eight-inch line and bisect it. Erect a perpendicular from the point of bisection, four inches in length. On each side of the end of the perpendicular erected, and at right angles to it, draw a two-inch line. Connect the ends of the two-inch lines with the ends of the eight-inch line. Cut out the form drawn, and make three others like it. Three-quarters of an inch inside of the edge of the forms made, draw another outline parallel to it (see Fig. 46). With a penknife cut carefully on the line just drawn and remove the piece of cardboard from the centre of the form. Cut four

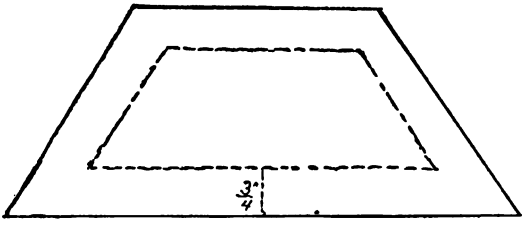
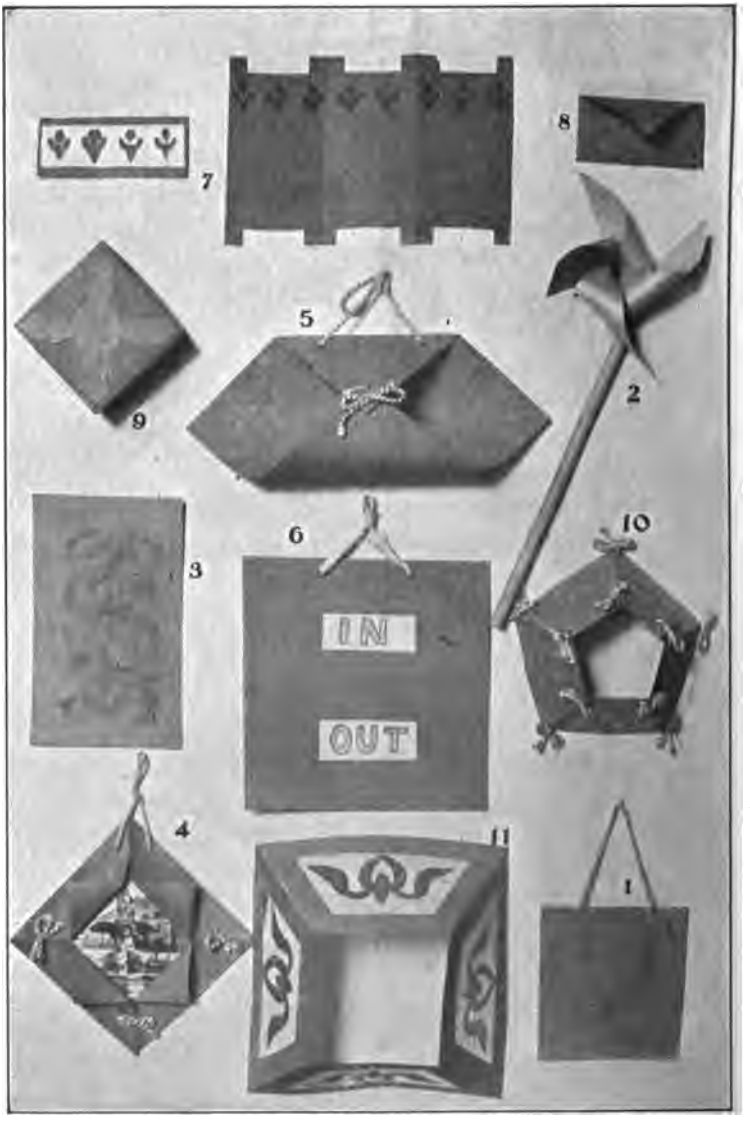


Fig. 46.



PAPER CUTTING AND FOLDING

1. Transparency.
2. Pin-wheel.
3. Conventional cutting.
4. Picture-frame.
5. Wall-pocket.
6. Office card.
7. Screen.
8. Envelope.
9. Box.
10. Lamp-shade.
11. Lamp-shade.

pieces of rice paper a trifle smaller than the original form and make some simple design on them, using India-ink. Paste one beneath each piece of cardboard. Care must be taken to have the designs well placed in the space from which the cardboard has been removed.

If this work is executed neatly a very attractive lampshade may be made. After the four sides have been prepared, they may be pasted together with paper hinges.

CHAPTER VI

SOME STORIES IN CLAY

CLAY offers another medium of free expression for the child. He has the whole world and life about him bringing him daily impressions, and as he expresses himself in various ways he learns to understand this world of things. Many a story has been worked out and told on the sands of the seashore and in the mud-pie period of childhood.

Clay modelling may be made of deep significance and educational value. It cultivates careful attention and observation, and is of interest to the child. The work of young children will necessarily be crude—but it is still the childish expression, and high art is not the aim of this work.

Potters' gray clay is the best material for this purpose. It should be as free from lumps as possible, and not too brittle when presented for use. It should be kept moist in tin boxes, or in an iron pail covered with a rubber cloth, to prevent evaporation.

Old slates or squares of oil-cloth for protection of the desks may be used, but if these are not available, heavy glazed paper will answer. It is not necessary to have many tools for this simple work. Knitting-needles, hairpins, wooden toothpicks, slate-pencils and small pieces of string or wire, will be found of much help. The handle of a spoon makes a good tool. Kindergarten supply places offer tools for sale; they are helpful, but one can manage without them, if money is not available for the purpose.

Before presenting the clay to the child, the teacher should see that it is in a favorable condition. It should be soft, and yield easily to the pressure of the thumb, but not sticky.

CLAY MODELLING

1. Bird life.
2. Plant life.
3. Seashore life.
4. Vegetable life.
5. Animal life.
6. Home life.
7. Scene.
8. Bowl.
9. Beehive.

The object to be modelled should, if possible, be placed before the child, but if certain stories are to be worked out, the teacher may in a measure rely upon his imaginative genius. Clay will be found a very helpful medium used in connection with stories of primitive life, and truly deepens the childish impressions of things in days that are past.

I. Bird Life

Materials.—Potters' clay.

A simple story may be told by the teacher or mother, illustrating the building of the bird's nest, the laying and hatching of the eggs, and the flight of the young birds. In one lesson the nest and eggs, with mother and father bird may be made, and in the second, the eggs removed and the small birds substituted.

Take a small lump of clay about the size of a large egg. Make a small indentation toward the centre with the pressure of the thumb. Gradually work around with the thumb and hold the clay in the palm of the left hand until a small cup shape is formed. Roughen the outside of the nest with a piece of wire or a toothpick. Take three or four small pieces of the clay and form into egg shapes by rolling them around between the palms. The teacher will find the real objects of great assistance, and the children can readily copy them. Small birds may be made of any size by rolling the small lump of clay, as for the eggs, and then pinching the sides to form wings (see Plate VII, No. 1).

II. Plant Life

Materials.—Potters' clay.—Oak-leaves and acorns.

Give each child a small lump of clay. Press it into a plinth or slab three-quarters of an inch in thickness. Lay the leaf on the clay and press it into it until the indentations of

veins and shape are made. The leaf may then be removed, or the outline shape cut with a knitting-needle before displacing it. The small pieces of clay left may be formed into acorns. Roll a small lump of clay between the palms. Each child may be given an acorn to copy and the shaping and roughness of the acorn-cup made with a hairpin or piece of wood.

Impressions of various leaves and flowers, coins, etc., may be made in a similar way. If impressions are made of flowers, they may be colored after the clay is dry. This makes a very pleasant variation (see Plate VII, No. 2).

III. Seashore Life

Materials.—Potters' clay.—Shells.—Pictures of fish.

A story of seashore life may be told by the teacher, and the children each given a shell to copy. A lump of clay about half the size of an egg may be rolled between the palms. Place the clay within the shell to get the impression. After this has been made and the shell used as a cutter for the shape, make the finishing markings of the shell with the wire tool or hairpin.

Fig. 47.

The picture of a fish may be placed before the children. Make a plinth three-quarters of an inch thick and about 2 x 4 inches. With the wire, mark an outline of a fish on the clay (see Fig. 47). Use the wire for cutting out the fish and roughening the fins.

A basket for fish and shells may also be made. Make the basket of coils of clay. These may be rolled between the palms and made about the thickness of a peppermint stick. Coil the roll to form the bottom, and when that is sufficiently

large, the sides may be formed by allowing one coil to overlap another (see Fig. 48). A twisted coil of clay may be made for the handle and pressed against the sides of the basket until securely placed (see Plate VII, No. 3).

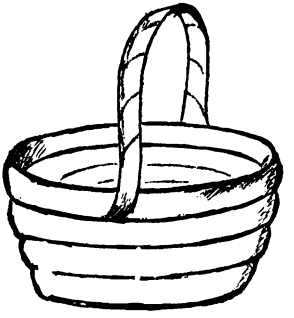


FIG. 48.

IV. Vegetable Life

Materials.—Potters' clay.—Potato, tomato, and carrot.

Have the children bring a vegetable from home, or the teacher may supply one for general observation.

Give each child a lump of clay and a piece of wood or wire for a tool and allow him to copy the shape of the vegetable placed before the class. Only one object at a time should be given. About one-quarter of a pound is needed for each piece. Such lessons are most interesting around Thanksgiving time, when stories of the harvest are most appropriate (see Plate VII, No. 4).

V. Animal Life

Materials.—Potters' clay.—Pictures of butterfly, cocoon, and worm, and, if possible, the real objects, as the teacher tells the story.

The worm is the first thing to be made in the natural order of sequence. This may be made by rolling a small lump into an oblong roll. Small pieces of clay may be removed where the eyes of the worm should appear, and the under surface roughened with the wire tool. The chrysalis stage is easily made by the children, but the butterfly is more difficult for little fingers. To begin it, make a roll of clay about the size of the worm; roughen the under part. Take two small lumps

of clay, flatten them and form into the shape of wings, using the wire tool. It is expected that the results will be crude. The worm may be colored green, and the butterfly an appropriate color, after the clay is dry.

This will probably take two or three lessons to work out.

The butterfly may also be made on a plinth. The outline must first be drawn with the wire tool. Small pieces of clay may then be added to form the wings in relief, but this work will be found a little more difficult for young children.

The beehive and bee makes an easy and attractive lesson. Pictures of a hive are easily obtainable, and the small mounds readily made. The foundation is a small lump formed into a round ball between the palms. It may then be flattened on one side by placing it on the slate and the rest of the moulding and markings made according to the pictures. Very small pieces of clay may be made into bees by rolling the clay into small balls and pinching the sides for wings (see Plate VII, No. 9).

VI. Home Life

Materials.—Potters' clay.—Home objects.

The children may play that they are housekeepers and have a loaf of bread to make. The teacher or mother may tell a story of how this is done. The children may make the bowl, rolling-pin, and finished loaf of bread. These are easily formed from the real objects, but, of course, made miniature in size.

A lesson in this connection may be given when the story of butter-making is told and the simple churn modelled in the clay (see Plate VII, No. 6).

VII. Pictures in Clay

Many interesting lessons may be given by having the children draw on the clay with the wire tool. The aim is, of course, free expression, as in the drawing on paper or black-

board. A plinth about three-quarters of an inch thick and 6 x 4 inches makes a good size. Care should be taken to have the corners well formed. Any story of interest in connection with the work of the class, or any story the mother may tell can be drawn upon the clay (see Plate VII, No. 7). For instance, a story of the sea and a boat may be drawn, and the water colored blue and the sails white, or the sketch may be drawn without coloring.

VIII. Other Objects in Clay

There are many objects used in the children's daily life which may be copied by them. These may be placed before the class and the children allowed to work them out in an individual way. As the work becomes more difficult, the children may be taught to make a bowl by coiling and smooth-

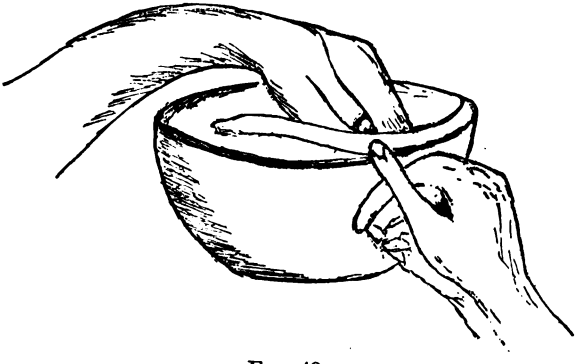


FIG. 49.

ing the coils. This is perhaps not so easy, but it offers a variation in method of working. The bowl is started with a coil at the bottom, and as each row is added it is smoothed downward both inside and out, and the surface finished in this way (see Fig. 49). A simple design in line may be made around the top with a wire (see Plate VII, No. 8).

CHAPTER VII

WEAVING

THERE is no industrial history quite so interesting as that of the development of weaving. Few people think of the evolution of this wonderful art, or of the many processes through which a garment has actually passed. It is probably the first art which primitive people practised.

Weaving can be traced to early biblical times. The Israelites were well versed in it, as well as in spinning and dyeing. For centuries weaving has been practised in Egypt, China, and India.

Until within the last one hundred and fifty years, the style of loom employed was very primitive, and even to-day in British India and in America among the Indians, very simple looms are still in use. The Egyptians are generally accredited with the invention of the loom.

In the most primitive ones there are two beams or sticks. Between these the warp threads are strung, and the woof woven under and over with the fingers. A step in advance of this is the use of a stick as shuttle, upon which the woof is wound. The evolution of warp and cloth rollers and of batten and shuttle is most interesting, and in the wonderful Jacquard loom of to-day, with its great facilities for beautiful pattern weaving, one hardly recognizes the primitive friend of centuries ago.

With the introduction of steam power and modern inventions, many of the hand-looms of colonial times were stored in the attics. During the past few years, the revival of handicrafts has brought them from their hiding-places. Many

beautiful specimens of hand weaving made on such looms, may be seen at the arts and crafts shops in the leading cities.

Weaving as a school or home subject may be made most interesting to children. It offers so many opportunities for originality in the way of designing, and is easily executed by the youngest children in the grades. In connection with the study of primitive life, there is nothing more fascinating to the child than the weaving of a stockade of splints, a mat of rushes for the house, or the Indian blanket on a tiny loom, which he has made. As the study of weaving progresses, simple looms may be made out of paper boxes, and the heddle of the Zuñi Indian studied. Still another step may be introduced with the warp and cloth rollers and the material actually woven and rolled from one to the other. The study of heddle and treadle weaving makes an interesting problem for the upper grades or high-school children. Circular weaving is an interesting variation, and numerous small articles may be made from the woven circles.

Many materials may be utilized in this work: Germantown wool, carpet yarn, raffia, silkoline, rags, and candle-wicking may all serve the purpose. In the early stages of the work, the paper weaving of the kindergarten may be given, as well as the weaving of splints.

Macramé cord makes a good foundation for the warp when Germantown wools or carpet yarns are used as woof.

Weaving develops a dexterity of hand and tends to increase thought with skill. The child is trained in perseverance and patience, and there is joy in actually producing the woven fabric.

Community feeling may be developed by having the children work for a common object. A number of the small rugs woven by them may be sewed together, and a large one for the class-room made. The work may be planned in such a way that certain children weave the borders and others the plain part of the rug.

Weaving offers many opportunities for the introduction of simple and pleasing designs. These may be worked out in the drawing period, and utilized when opportunity presents itself.

I. Splint Weaving

Materials.—8 pieces of ¼-inch flat rattan or splint 8 inches long. Approximate cost per child... .01

Have the children point both ends of each piece of splint, with the scissors. Lay four splints side by side on the table, with the ends pointing up and down. Take the fifth splint in the right hand and weave over No. 1, under No. 2, over No. 3, and under No. 4. Hold them flat with the palm of the left hand. Take splint No. 6 and weave under No. 1, over No. 2, under No. 3, and over No. 4. No. 7 is woven like No. 5 and No. 8 like No. 6. This may be called a mat, stockade, or fence. If utilized for portion of a fence on the sand table, the two upper splints may be moved together

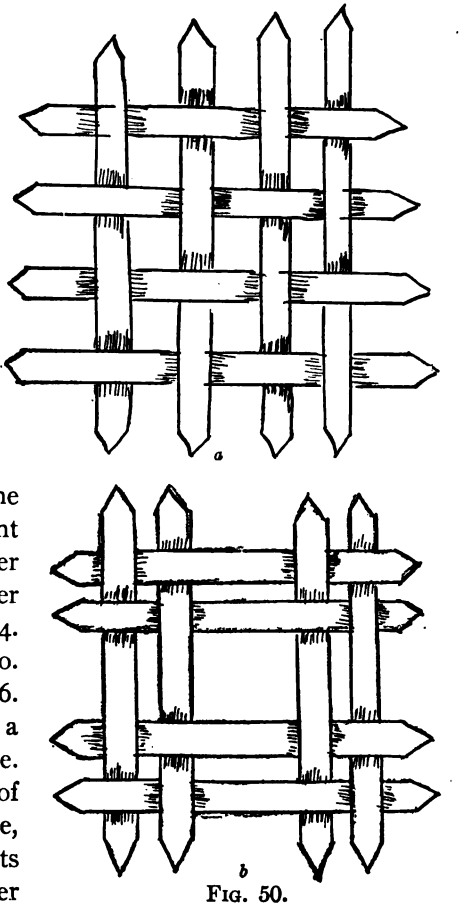


FIG. 50.

and the two lower ones, to form a rail (see Fig. 50, *a* and *b*).

This simple work should teach the principle of weaving; which is over and under every other splint.

II. Paper Weaving

Materials.—1 kindergarten mat and strips.—Small piece of cotton wadding. Approximate cost per child..... .01

It is hardly necessary to describe the familiar kindergarten weaving. This may be done in a very coarse way on mats of bogus paper before the more delicate papers are utilized. This weaving offers many opportunities for variation of design and change of color, and many attractive articles can be made from the mats. After weaving a square mat, it may be folded in a triangular shape and a sheet of wadding with sachet placed inside. The edges may then be pasted together. This is a very simple article for the child to make.

III. Woven Hammock

Materials.—Carpet yarn or Germantown wool.—Macramé cord or twine.—Pasteboard, 6 x 8 inches.—2 brass rings. Approximate cost per child..... .03

In the card, 6 x 8 inches, punch two rows of holes about one quarter of an inch apart. These rows may be placed one inch from the top and bottom of the card, and a margin of one inch left on each side of the rows. Plate No. 8 will show the arrangement of the rows of holes. In the middle of the back of the card sew loosely the two brass rings which have previously been tied together (see Fig. 51). The warp threads of the hammock will be the long cords on the right side of the cardboard. The woof is the thread, which is continuous and is

FIG. 51.

put in to form the woven material and selvage. Tie one end of the macramé cord through brass ring No. 1. Put the other end of cord through the first hole of the lower row, bring it through to the right side, and draw it through hole No. 1 on the upper row and down on the wrong side to the second brass ring. Pass it through the ring and back to the second hole on the upper row, then through the second hole on the lower row and through ring No. 1 again. Sixteen or seventeen holes make a very good width for the small hammock, and there should, consequently, be seventeen warp cords.

The woof thread is continuous, and so forms the selvage by passing around the outside warp threads. The weaving is simple weaving, over and under one, back and forth. Bands of another color may be introduced to form stripes in the hammock. When the weaving has been finished, it should extend from row to row of holes. The ends of the finishing, and also the beginning of the woof, may be run in underneath so as to be hidden.

The cardboard may then be cut away and the hammock cords bound below the brass rings.

If it is desirable to save the cardboard, the ends of the cords which passed around the rings may be cut and looped around the rings afterward and bound. In order to preserve the cardboard, the rows of holes may be cut at the edge of the cardboard and the cords passed through the indentations. It will not be necessary then to cut the cords. The hammock in Plate VIII, No. 3, has been made in this way. Mats may also be woven in a similar manner, but it is not necessary to have the warp long on the wrong side of the card. Pass the cord from hole No. 1 on the lower row up on the right side of the card through hole No. 1 on the upper row. Pass it through hole No. 2 on the upper row from the wrong to the right side, and down again to hole No. 2 on the lower row. The ends may be cut on the wrong side after the mat is finished, and a fringe tied with the ends.

Simple designs may be introduced, but it is not advisable until the children have had some experience in weaving and putting in bands of color. Plaids and stripes may be made by having some of the warp threads of different colors. Plate VIII, No. 7, shows some plaids woven in this manner. This is a very simple loom, and very inexpensive.

IV. Rug Weaving

Materials.—Macramé cord, No. 6.—Germantown wool, or carpet yarn.

Another step in the history of weaving is taken when some method of raising and lowering the alternate sets of threads is introduced. The teacher should begin this work with a development lesson in weaving and a talk about loom construction. The history of the Zuñi Indian method of raising the threads is very interesting to children. Simple looms may be made of a pasteboard or cigar-box. If the candy-box is used, make a row of holes in each end of the box and near to the top; if a cigar-box serves the purpose, a row of nails must be placed along the edge of each end of the box (Plate IX, No. 1 and No. 2, shows two such looms). In loom weaving of this description the children must understand the parts thoroughly before beginning the construction. Warp and woof must be well understood. The shuttle may be a piece of cardboard around which the woof is wound before it is passed between the threads; it may be simply a stick, or the fingers may be used as a shuttle for passing the woof. The arrangement for alternating the threads is called a heddle. The Zuñi Indian system was a simple one (see Fig. 52). Thread No. 1 is passed

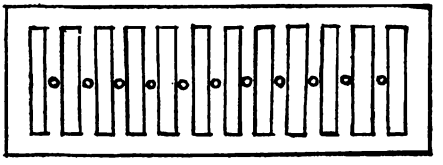
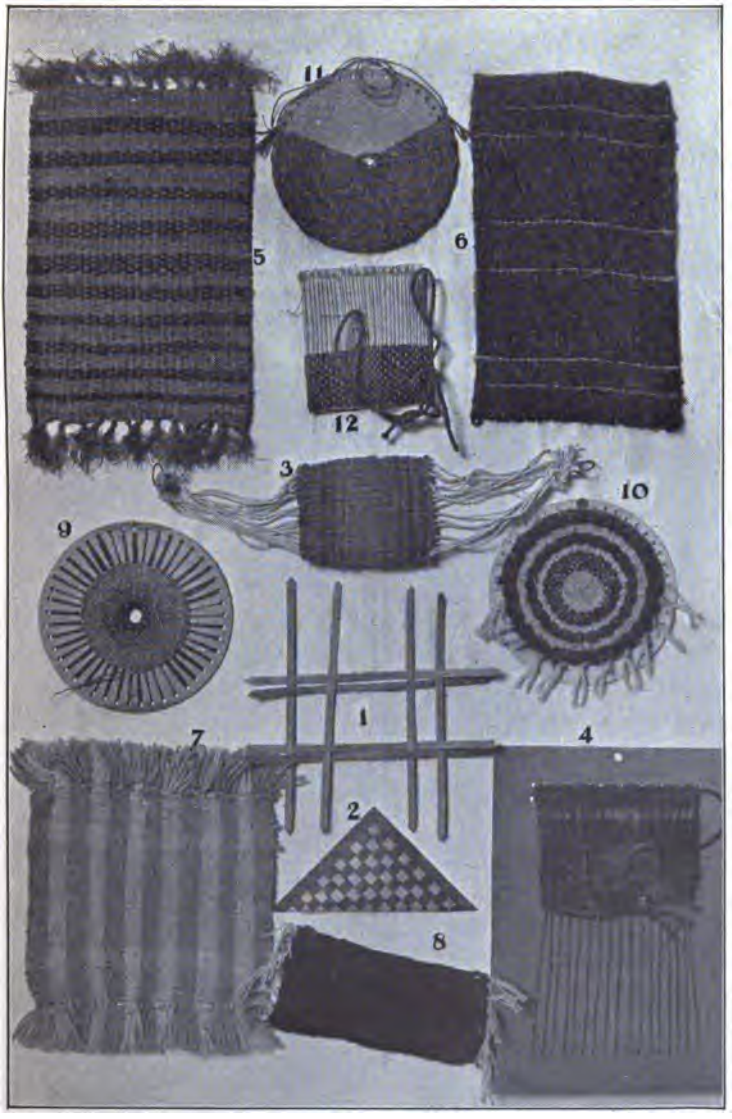


Fig. 52.



WEAVING

1. Splints.
2. Paper weaving.
3. Hammock.
4. Mat.
5. Raffia mat.
6. Indian blanket.
7. Plaid weaving.
8. Small rug.
9. Circular weaving.
10. Circular mat.
11. Circular pocket.
12. Bag.

through the first slit and can then move up and down. No. 2 is passed through a hole and is held. No. 3 moves, and No. 4 is held, and so on across the warp. When the heddle is raised all the threads in the holes are drawn up and the other alternate ones are lowered. The shuttle is then passed between this division. When the heddle is lowered the threads in the holes go down and those in the slits all up together. The shuttle is then passed through this other division. This is a simple device for alternating the threads and is, of course, labor saving when there are many in the warp.

To string up the box: Make the heddle of a piece of cardboard according to the width of the cloth desired. If sixteen warp threads are used, there will be eight holes and eight slits in the heddle. Tie the warp cord to nail No. 1 on the lower row. Pass it through slit No. 1 of the heddle and around nail No. 1 on the upper row. Bring the cord back through hole No. 1 of the heddle and around nail No. 2 on the lower row. Continue until the loom is strung up. Wind the woof yarn on a piece of cardboard. Hold the heddle in the left hand, raise it and pass the shuttle between the threads. Lower the heddle and pass the shuttle in return. On so small a loom the fingers can be used in place of a shuttle.

The heddle also serves as a batten, which is used to push the woof threads together and so to make a more closely woven cloth or rug.

Continue until the rug is woven. This method makes an interesting problem, and is easily executed when once the principle is understood. The rug may be removed by cutting the cords at the ends, as in the paper box, or removing them from around the nail heads in the wooden box. The ends may be tied into a fringe, or a fringe of wool or yarn made and put in (see Fig. 29). Plate VIII, No. 8, shows a rug made on the cigar-box loom.

If it is desired to have a stripe woven in the rug, it may be introduced by carrying the original color woof along the

selvage, and working the color of the stripe around it in passing the woof. When it is necessary to work with the original color, it may be used, and the color of the stripe carried along the selvage until it is necessary to introduce another stripe.

V. Another Loom

Materials.—Two flat sticks, 9 x ½ inches.—Two flat sticks, 7 x ½ inches.—One flat stick, 6 x 1 inches.—One stick, 5 x ½ inches.—Germantown wool.—Nails.

Make an oblong frame of the two 9-inch sticks and the two 7-inch sticks of half-inch width. These may be cut from a cigar-box or pine sticks. Nail the frame at the corners. Hammer ten small nails across the top bar of the frame and ten across the lower, having them exactly opposite each other. Place them about one-half inch apart (see Plate IX, No. 3). Attach the warp yarn to the first nail on the lower row; wind it around the first nail on the upper row; pass it to nail No. 2 on the upper row, around it and down to nail No. 2 on the lower row. Continue until the warp is arranged.

The stick 7 inches long by ¼ of an inch wide is to be used for the heddle. Cut a slight groove one-half inch from each end of the stick. Tie a piece of cord in the groove at one end. Lay the stick on top of the warp threads; pass the cord tied to the stick around the first warp thread, and then around the stick. Skip the second thread and pass the cord around the third warp thread. Continue until every other warp thread has been attached to this heddle stick. Make each of these loops about one inch in length. This is for raising the alternate threads. The shuttle is made of the stick 5 x ½ inches (see Fig. 53). Wind the wool for the woof around the shuttle.

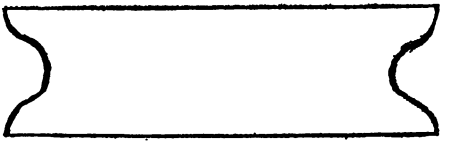


FIG. 53.

Another stick is necessary for obtaining the other division of the threads; this is called a batten, and is to be made of the stick 6 x 1 inches, and is flat and slightly rounded at the ends. The batten is used to push the woof threads together and to batten the rug so that it will be more firm in construction.

Raise the heddle and pass the shuttle between the division of threads. Pick up the alternate threads with the batten, and again pass the shuttle across. Continue until the rug is woven. This is the principle of the Navajo Indian rug weaving. The real method used by the Indians is very much more complicated. The warp is made before it is attached to the loom, and the Indians have a method of introducing selvage cords, and of attaching the heddle rod, which is quite intricate and too difficult for children. The Third Annual Report of the Bureau of Ethnology, 1882, gives a very definite description of the method of work pursued by the Indians.

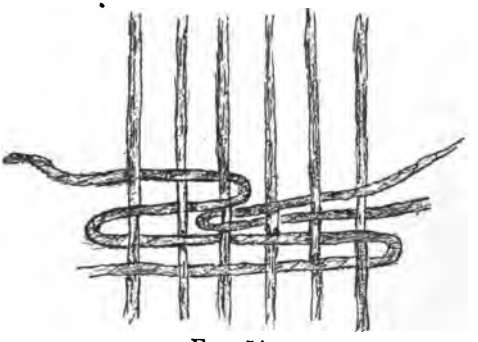
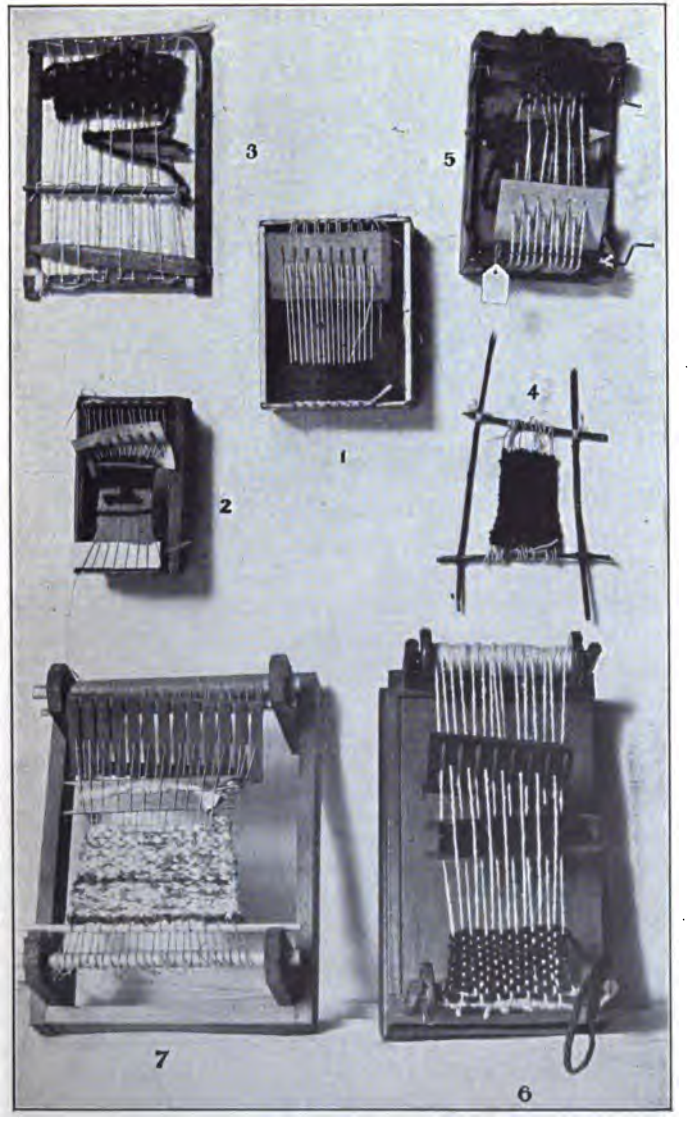


FIG. 54.

In the study of Indian life the children may make a simple loom, using the principles of the above, but changing the construction somewhat.

Take four natural sticks, cross and tie them at the corners (see Plate IX, No. 4). The cord is wound back and forth around the upper and lower rods of the frame to form the warp. Simple weaving may be put in with the fingers, without any heddle, or a simple heddle and batten arrangement may be made, as in the above description.

In making a pattern care must be taken to overlap the threads of the background and of the pattern introduced (see Fig. 54).



LOOMS

1. Cigar box.
2. Paper box.
3. Primitive.
4. Navajo.
5. Roller.
6. Woolman.
7. Roller.

VI. Loom for Continuous Weaving

Materials.—Cigar-box.—2 wooden rollers.—Nails.—Yarn.

This loom will be found too difficult for very young children to construct, but it can be made by those of the sixth or seventh grade. The principle must first be understood and the children allowed to work out their own ideas. One roller is used for the warp threads and the other is the roller upon which the cloth is wound after being woven. The warp threads are first attached to the cloth roller, then passed through the heddle, and finally fastened to the warp roller and wound upon it. The threads may be cut any length desired for the continuous piece of cloth. The weaving is done in the same manner as in the preceding looms. As the cloth is woven it may be wound upon the cloth roller, and the warp unwound from the warp roller. The plate shows the small wire handles attached to the rollers for this purpose. Plate IX, No. 5, shows such a loom made from a cigar-box. The Zuñi heddle is used (see Fig. 52) and a piece of cardboard for shuttle. Plate IX, No. 7, also shows another method of construction for a simple frame and roller loom.

VII. Manufactured Looms

There are several good looms on the market adapted to school purposes. These may be secured at the kindergarten supply places, or directly from the inventors. Plate IX, No. 6, shows the Woolman loom, with its rollers, shuttle, heddle, etc. The uprights may be removed from the top of the box cover, and the whole packed neatly within, without disturbing the weaving in any way.

VIII. Circular Weaving

Materials.—Circle of cardboard.—Raffia or rug yarn.

Plate VIII, Nos. 9, 10, and 11, shows several examples of circular weaving which have not been removed from the cardboards on which they were made.

For a small rug cut a circle of cardboard six inches in diameter, and one-quarter of an inch from the edge make a row of holes. It is necessary to have an uneven number. Place them one-quarter of an inch apart. In the centre of the cardboard cut a hole one-quarter of an inch in diameter.

Wind the warp threads, beginning at the centre hole. Hold the warp in position, pass it over the upper side of the card, through a hole at the edge, around the back of the card and through the centre. Continue to wind back and forth, passing through the outer row of holes in regular order and back again each time through the centre hole.

Begin to weave at the centre on the upper side of the card and work toward the edge of the circle. Be careful not to draw the woof too tightly in going over and under the warp.

When the weaving has been completed, cut the threads on the back, half-way between the edge and the centre of the cardboard. The ends at the outer edge are tied together to form a fringe, and those at the centre are fastened by running them into the weaving on the wrong side of the mat.

Small pockets may be made by weaving on both sides of the cardboard and using raffia instead of wool. In making them it is impossible to pass the warp threads of raffia through the centre hole; instead, a brass ring is placed in the centre of each side, and the warp is passed from side to side through the brass rings at the centre and over the outside edge. It is not necessary to have a row of holes at the outer edge as in the circular mat. In winding the warp only two-thirds of the circle is utilized, and in the weaving the woof is turned at the outside thread of the segment of circle covered (see

Fig. 55). Both sides of the circle are woven in this way, and the cardboard broken for removal. A braid of raffia may be made and attached to the sides for a handle.

Weaving may also be done, in a similar manner, over a square of cardboard. Plate VIII, No. 12, shows a bag in process of making. Arrange a row of pins across the top of the card, about one-quarter of an inch apart, allowing half of the pin to extend on each side of the card. The warp threads are wound lengthwise of the card, each time passing around the portion of the pin on the opposite side. There are thus two sets of warp threads and the bag is woven round and round the card. When the row of pins is reached, remove them, and a set of loops will hold the woof at the top and complete the finish of the bag. Remove the cardboard. A draw-string of another color may be introduced in the weaving about three-quarters of the way up.

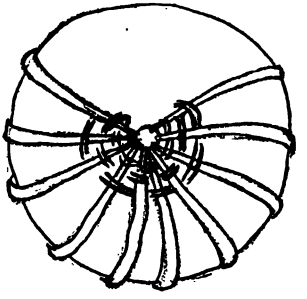


FIG. 55.

CHAPTER VIII

BEAD WORK

THERE is perhaps nothing that appeals to a child more than the bright-colored beads which can be obtained in such a variety of color and size. Primitive people use beads for decoration on many of their implements of peace and war. We can turn to our American Indians for inspiration, as to color, design, and the articles to be made. Their manner of working and their methods are simple, and easily carried out by the child. The simplest form is that worked on chamois or buckskin, where the beads are strung on thread and sewed down at intervals.

I. Moccasins

Materials.—Chamois-skin.—Beads, Nos. 2–0, several colors. —Linen thread, No. 70.—Needles, No. 8.—Thimbles. Approximate cost..... .03

These moccasins can be made in any size desired, the shape being the same in all sizes (see Fig. 56). If the children are to make them to fit themselves, take a piece of paper about twelve inches square, fold it in half and crease. Open it and lay it on the floor. Have the child place the centre of

Tongue.

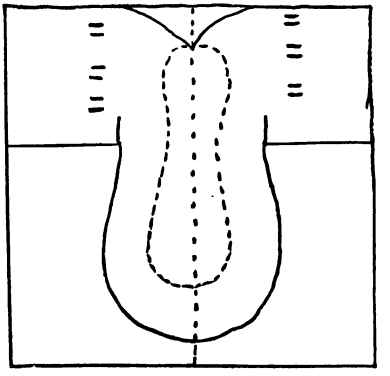


FIG. 56.

his foot along the line creased, with the heel one and one-half inches from the edge of the paper. Draw around the foot with a pencil. Put the paper on the desk, and from the curve of the instep around the toe allow one inch. From the instep draw a straight line to the outside of the square, both sides. From the heel draw a curved line to the edge of the paper about two inches up from the crease. Parallel with the top of the moccasin cut an inch slit where the line from the toe and the straight line meet. This forms the lap in front. The tongue is a straight strip with one end rounded to fit into the toe. To find the length for this, measure from the toe, one inch from the end of the foot, to the top of the shoe, and for width, across the top of the foot at the instep. This should be about two and one-half inches. You will now have a perfect pattern to work from. Cut out the paper, lay it on the chamois, and cut two pieces from each part of the pattern. The bead work is done on the tongue only. Decide on the pattern, which may cover the whole lower part of the tongue, or be placed in the centre of the rounded end. Thread the needle and bring it through to the upper side.

If the pattern is to have a border, put that on first. Put as many beads as are necessary to make the width on the needle; put the needle through to the wrong side again, on a direct line from where it came out and far enough in advance to make the beads lie flat. Bring the needle again to the outside, making a short stitch on the wrong; thread on the same number of beads and put the needle in close to where it came out on the first row. Continue working like this all around the toe. At the round end the lines of beads will be slightly crowded together on the inside and fanned out on the outside of the curve (see Fig. 57).

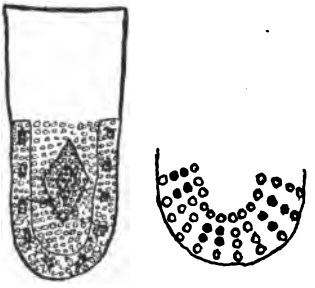


FIG. 57.

To fill the centre, start at the upper end of the border and work across to the other side. From one to one and one-half inches of beads may be placed on the needle at once and sewed to the chamois-skin in sections. A small back stitch is taken on the wrong side in order to make the break in the line of beads show less. After the bead work is finished, gather the round end of the largest piece and draw it up until it fits the round end of the tongue. Measure from the straight end of the tongue the length of the side of the moccasin and begin sewing from that point. The tongue is sewed in on the wrong side, using an overhanding stitch (see Fig. 31). The back of the moccasin is then sewed in the same manner. Cut a row of slits around the ankle and run in strips of chamois for ties. These moccasins can also be made for dolls or for babies.

II. Bead Belt

Materials.—Chamois-skin 1½ x 23 inches.—Beads Nos. 2–0, several colors.—Linen thread, No. 70.—Needle, No. 8.—Thimble. Approximate cost per child..... .03

This Indian belt may be made for the children to wear. Cut a strip of chamois-skin one and one-half inches wide and long enough to go around the waist. Find the centre and measure out each way about two inches. This gives the space to be filled with beads. Make a design that will fit in that space, and sew the beads on in a manner similar to the moccasins. The design may cover the entire width, or, if in the form of a diamond or other device, it may be placed in the centre without using a background of beads. This last method is simpler, and does not require so much time to accomplish. The ends of the belt may have narrow strips of chamois, sewed or tied in, to fasten the belt together.

Indian dolls may have their clothing decorated with this same style of bead work, and it may also be applied to tepees and bags.

III. Egyptian Chains

Materials.—Raffia, 3 strands.—Beads E, 3 strings.—Approximate cost per child..... .03

These little chains are very attractive and make good work for children in the fourth or fifth grade. The original Egyptian chains were strung on fine strands of braided leather, but raffia makes a very good substitute.

Take one strand of raffia, plain or colored, and divide it in thirds, lengthwise. From the fine end begin stringing on the beads until they cover about eight inches on each strand. Care should be taken not to wet the raffia, as the stiff end will pass through the beads much more readily. Push ten beads to within one and one-half inches of the large end of the raffia, and leaving out one bead, thread that end through the remaining nine. Do this to each strand and fasten them together at the base of these beads to form a tassel. Begin braiding, holding the strands out at right angles. Braid for one-quarter of an inch and push up a bead on each outside strand. Hold them in place and continue braiding, pushing up two beads every quarter of an inch (see Fig. 58).

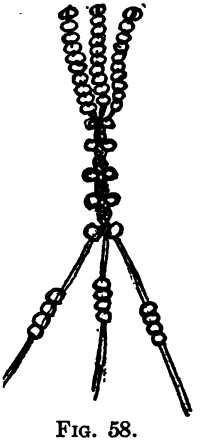
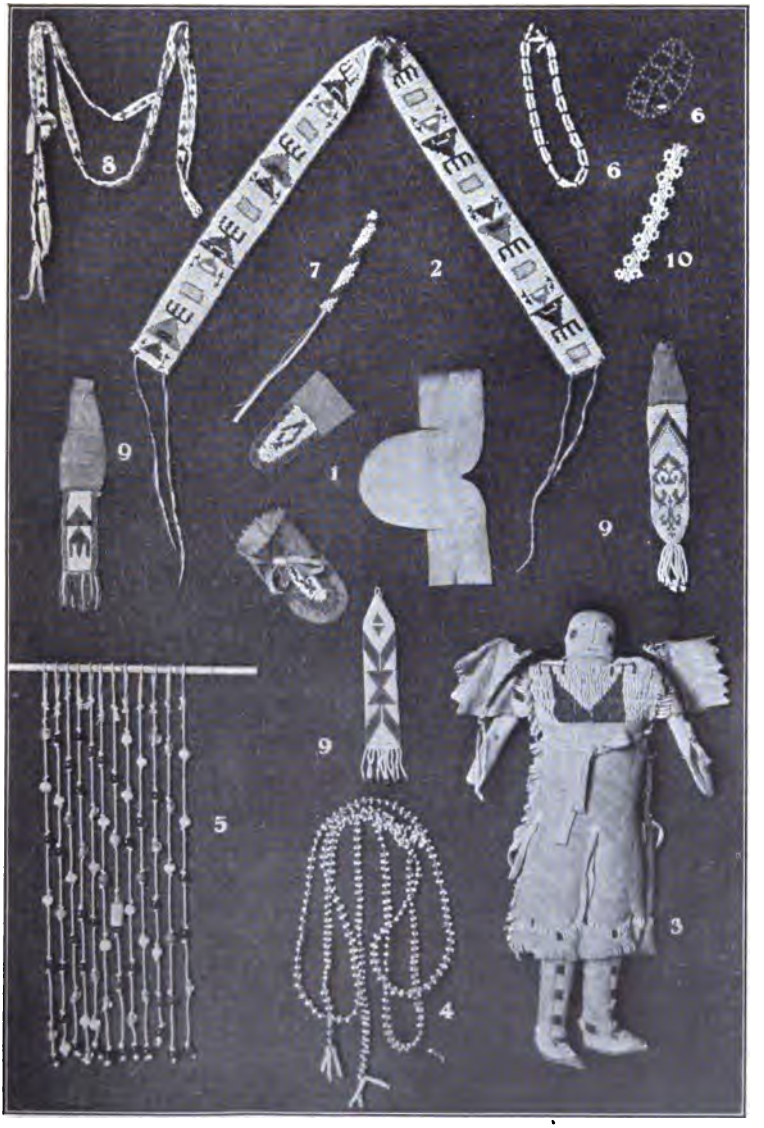


FIG. 58.

When the raffia requires piecing push the large end up through the beads that remain on the strand to be pieced, and lapping the ends, continue braiding; these ends are cut off afterward. When the chain is from one and one-half to two yards long, finish the end in the same manner as the start of the chain. These two tassels may be fastened together afterward.



BEADWORK

1. Moccasin.
2. Belt.
3. Doll.
4. Egyptian chain.
5. Bead portière.
6. Bead chains.
7. Round bead chain.
8. Flat bead chain.
9. Fobs.
10. Daisy chain.

IV. Bead Curtain

Materials.—Macramé cord, No. 16, 3½ yards.—Large glass beads.—Tapestry needle, No. 19. Approximate cost per child..... .05

Cut the cord into twelve lengths and thread one end of a piece into the needle and in the other make a knot. String on one bead and hold in place with an overhand knot. About one inch from the knot place another knot, and string on another bead. Continue in this way until within three inches of the end, then form a loop to slip on to the curtain-pole. Make each cord in the same way. Patterns may be worked out by spacing the beads and knots at different intervals. Slip all the strings on the pole, which may be made of a dowel-stick or of large rattan. Tie-backs may be made of a smaller cord braided with beads, the same as in the Egyptian chain.

V. Bead Chain, No. 1

Materials. — Four or five strings of beads, E. — Linen thread, No. 70.—Needles, No. 8. Approximate cost per child..... .03

This is simple work and can be done by young children. Thread two needles with linen thread, from one and one-half to two yards in each length. Tie the ends of the threads together, and begin stringing the beads on one needle. After you have fifteen or twenty beads on one thread drop that needle, and with the other string on three beads. Put that needle through the fourth bead on the other string, and again string on three beads (see Fig. 59). Continue in this manner until the chain is long enough.

FIG. 59.

A variation may be made by stringing six beads on one string and three on the other, and then putting the needle on the last string,

through the last three beads on the first string. Continue working until the chain is of sufficient length. The threads change place at each loop, the right-hand one becoming the left (see Fig. 60). Two colors may be introduced by using one color for the side strings and another for the bar across the chain.

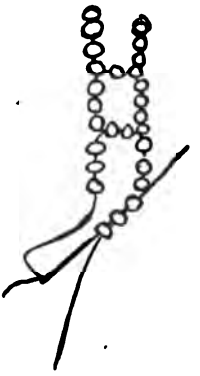


FIG. 60.

VI. Bead Chain, No. 2

Materials.—Corset lace, 1.—Four or Five strings of beads, No. 2-0.—Linen thread, No. 70.—Needle, No. 8 or No. 9. Approximate cost per child..... .04

This chain is very pretty, and is simple work. It differs from the two described, being round instead of flat. Thread the needle with the linen thread and fasten it to one end of the lace and on it string ten beads; put the needle through the second bead and string on three more; put the needle through the fourth bead ahead of the last one it passed through. Continue in this manner until the chain is the desired length. If two colors are used, have the last three beads of the first row of contrasting color, and put on three each row around, beginning one bead ahead each time. This will make the stripe twist. To finish the chain, bring the two ends of the lace together and sew firmly, then work the beads over this end. A tassel of beads may be used for a finish, or the chains may be mounted by a jeweller.

VII. Bead Chain, No. 3

Materials.—Six strings of beads, No. 2-0.—Linen thread, No. 70 and No. 100.—Milliner's needle, No. 10.—Thimble.—Slate frame or loom. Approximate cost per child.. .05

Almost everyone has seen or made one of the woven bead

chains that have been worn so much lately. An endless variety of these chains may be made, but the underlying principles are the same in all. Cut an even number of strings of No. 70 linen thread, from one and one-half to two yards long—six or eight strings for a narrow chain, and from eighteen to twenty-two for a fob. Fasten these strings together and if a loom is used slip one into each notch or between the nails; if a slate or caning frame, fasten them securely to one side and carry them directly across to the opposite side and tie them there. Fasten the end of No. 100 thread, which has been threaded in the needle, with the others, which we will call the warp threads. Place the beads for the first row on the needle (one less bead than the number of warp threads), and hold the needle under the warp threads, a bead between each. Hold the beads in position with the first finger of the left hand and draw the needle through them; put it back through the beads in the opposite direction and on top of the warp threads. It is better to work from right to left first, and then from left to right. It is always best to have an uneven number of beads so as to give a centre for the pattern.

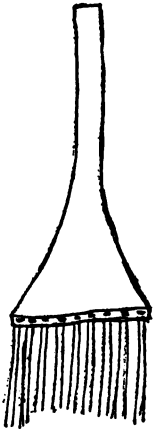


FIG. 61.

An attractive method of starting a fob is with a piece of chamois-skin about six inches long and one inch at one end, slanting to one-quarter of an inch at the other (see Fig. 61). The warp threads for the fob are cut about four inches longer than twice the desired length of the finished fob, and are sewed into the chamois-skin at the wide end. A turn of about one-eighth of an inch is made at that end and each thread is brought up through this and taken back again, leaving the space for a bead between. To finish the fob, thread each warp thread in the needle and string on beads for fringe,

leave out the end bead and bring the needle back through the others, and up into the weaving to fasten.

Cross-stitch patterns may be used for these chains, or the children may design them themselves.

VIII. Daisy Chains

Materials.—Chalk-white beads, No. 2–0, 3 or 4 strings.—Blue beads, No. 2–0, 3 or 4 strings.—Yellow beads, No. 2–0, 2 or 3 strings.—Linen thread, No. 70.—Long eye needle, No. 9 or No. 10. Approximate cost per child .... .06

In this very artistic chain the principle is different from the preceding ones, as all the work is done with one thread. If the following directions are carefully noted very little trouble will be found. When piecing the thread it is best to do so where the needle goes through the entire daisy. The new thread should be joined to the old with a weaver's knot (see Plate I, No. 9), and as close to the beads as possible.

Thread the needle and wax the thread, but do not have it too long. Put on three white beads and one yellow, then put the needle through the first white bead; put on four white beads, then pass the needle through all the beads of the daisy. Take up two blue, then one white and put the needle through the blue next to the white bead. Take up one blue bead and put the needle through the white bead of the daisy XX. Turn the chain and put on one blue, pass the needle through the blue, and put on one white, pass the needle through the white. Turn the chain and put on two white and one yellow, pass the needle through the white. Put on one blue, and pass the needle through the blue. Turn the chain and put on one blue, pass the needle through the blue, and put on one white, pass the needle through the

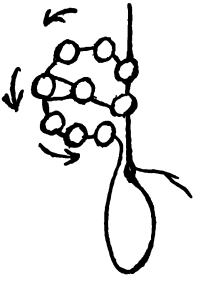


FIG. 62.

yellow. Turn the chain and put on three white and pass the needle through all the beads of the daisy (see Fig. 62). Then put on one blue, pass the needle through the blue, and turn the chain over to begin a new daisy. Put on one white, and pass the needle through the blue to start a new daisy. Put on one blue, and pass the needle through one white of the old daisy. Repeat from XX.

It is well in putting away the chain to stop work at the beginning of a new daisy, as it is easier to pick out the directions from that point.

CHAPTER IX

HOW TO FURNISH A DOLL'S HOUSE

Is there anything that appeals to the heart of a child more than a doll's house? If the furniture, rugs, curtains, pictures, and other decoration, as well as the house, can be made by the children, the pleasure they will derive will be even greater than in one furnished by someone else. All children love to play at doing the same as their elders, whether it is mother and house-keeping, or father at the store, on the farm, or at the office. In furnishing the house many things may be taught. Economy, hygienic furnishing, and decoration play a part in the scheme, that can be used to teach the children the useful lessons that will mean much to them in after life.

I. The House

Materials.—1 large box or 2 small ones.—A few wire nails.—Moulding.—Hammer and saw.

Obtain a wooden box, about 36 x 18 inches, from a grocery or a dry-goods store, or, if a large one is not to be had, two small ones of even size. Get one of the older boys to fit a partition which will divide the house into two rooms. Cut a doorway in this partition, for we must have communication between the rooms. Cut one or two windows in each room, and, if the boys are very ambitious, let them fit them with glass; this will make the house more realistic. Purchase enough narrow moulding to go around the top of the house; this makes a very nice finish and does not add very much to the expense. Your house is now ready to paint or stain on the outside and to be papered on the inside. In choosing

your box pick out one that is smoothly finished, as this will save trouble later. The stain or paint for the outside may be obtained at any paint store for about fifteen cents, and the children, especially the boys, will enjoy painting it. A soft green or brown will be found the best for this purpose.

After the house is finished on the outside choose a neutral color for the wall decoration. An ingrain paper will do nicely, and the children can design and stencil a border for the top. When the floors are stained the house will be finished and ready to be furnished. For the rugs, see the chapter on Weaving; for curtains, see the description of lace curtains and Bagdad portière, also lined portière, in the chapter on Upholstery. In the chapter on Coarse Sewing the cushions and table-covers have been described. In the chapter on Paper Folding a description of a paper screen is given; this will be found an attractive addition to the doll's house. This leaves the furniture and wall decoration to be considered in this chapter.

II. Doll's Bed

Materials. — Pasteboard box.—Colored cambric.— Dotted Swiss muslin.—Unbleached muslin.—Long cloth.— White flannel.—Cotton batting.—Colored wool and San silk.—Needles, No. 8.—Crewel needles, No. 3. —Thimbles.

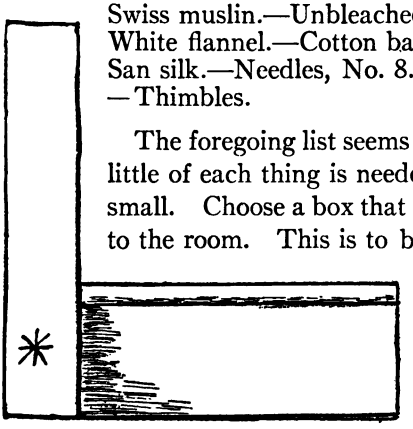


Fig. 63.

The foregoing list seems rather formidable, but so little of each thing is needed that the expense is very small. Choose a box that will be in good proportion to the room. This is to be covered by pasting the colored cambric on the sides and cover. Stand the cover up at one end of the box and sew it firmly (see Fig. 63). This forms the bed-

FURNITURE FOR DOLL'S HOUSE

1. Couch-cover.
2. Small rug.
3. Bed.
4. Toilet-table.
5. Couch.
6. Arm-chair.
7. Table.
8. Table.
9. Willow arm-chair.
10. Chair.
11. Passe-partout picture.

stead. Make a ruffle of the dotted muslin, the hem of which may be run with the mercerized cotton to form a decoration, and sew it around the box at the top. Cut a piece of muslin about four inches wide, and long enough to go over the cover and drop to the bottom of the box. This is to be hemmed all around, using the same width hem and decoration as on the ruffle. This piece will form the curtains, and is to be fastened in plaits at the top of the cover and drawn down and fastened at the sides where box and cover join. The bed is now ready for the mattress, pillow, and bedding. Measure the box and cut two pieces of unbleached muslin the exact size. Seam these together, leaving an opening at one side, turn, and fill with cotton; sew up the opening. Make the pillow in the same manner. The sheets are to be made of the long cloth, or any other soft-finished cotton. Cut them about two inches larger than the box, to allow for hems and tucking in at the sides. Put narrow hems on each side and one end, and a one-half inch hem at the other. The blankets are made of soft white flannel cut the same size as the finished sheet and worked around the edge with an even or uneven blanket-stitch (see Fig. 23), using the colored wool or Poseidon. The pillow-case is cut twice the width of the pillow, with the seams allowed, and about one and one-half inches longer. Turn a seam on each side of the muslin and overhand it together, explaining to the child that pillow-cases are usually made of material just the right width, and therefore the selvages are overhanded together. Make a narrow seam at the top, using two runs and a back stitch, and overcast it; a half-inch hem is put in the other end. A little white spread may be made by using a piece of an old towel, and either hemming it or tying in a fringe as described under Table-Cover (Chapter IV). The doll's initials might be worked in with cross-stitch, using red or blue marking cotton.

This little bed makes very good cooperative work, as several children can be working on it at the same time.

III. Toilet-Table

Materials.—Pasteboard box, 4 x 5 inches.—Colored cambric.—Dotted Swiss muslin.—Colored San silk.—White cotton, No. 80.—Needle, No. 8, and crewel needle, No. 4. Approximate cost per child..... .02

Take the cover from the box and cover the outside of it with the colored cambric, pasting it on and allowing it to run over the edge to the inside of the cover. Fasten the cover to the box, which has been turned on end (see Fig. 64). Cover the top of the table with a piece of dotted Swiss, sewing it to the lower edge of the cover. Make a ruffle deep enough to fall from the upper edge to the floor, and finish it with a hem, decorated to match the valance on the bed. The muslin ruffle should have about once and a half of fulness. A straight piece of the colored cambric, large enough to go across the front and ends of the top, and the depth of the ruffle, is then cut; this can be hemmed at the bottom or cut in small points. Gather the ruffle with a narrow heading at the top, turn in the cambric, and fasten them together. This is then sewed to the upper edge of the cover, and the table is finished. A little pin-cushion of cambric covered with muslin, and having a ruffle of lace around it, may be added to the top. The size of the box may vary with the size of the house. Always try to keep the right proportions between the house and its furnishings.

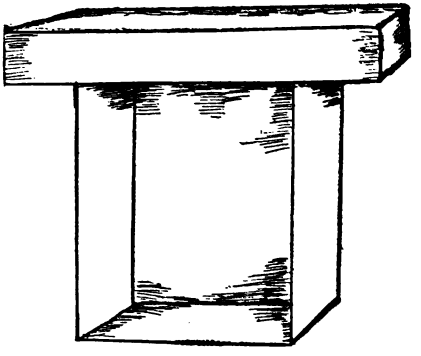


FIG. 64.

IV. Box Couch, for Dolls' Dresses

Materials.—Pasteboard box, 3 x 7 inches.—Cretonne or silkoline.—Colored cambric.—White cotton, No. 80.—Needles, No. 8.—Cotton batting.—Thimbles. Approximate cost..... .04

Choose rather a heavy box and take the sides and ends off the cover. Lay several thicknesses of the batting on top and cover it with the cretonne, both sides. For this cut the piece a little more than twice the width and enough longer to turn in at the ends. Turn the material from the top over to the under side of the cover. Turn in the other edges and overhand together at the ends and one side, the other side having no seam. Line the inside of the box with cambric, pasting it in place. Let this run over the upper edge to the outside, and it will give something to which the valance may be fastened. Cut a piece of cretonne the depth of the box, allowing a one-half inch hem and three times the measure of the entire top of the box. After this is hemmed, plait it in small box-plaits and fasten it to the top of the box. The lid which was covered first is now tacked on at the back of the box, so that it will open; this can be done by making several button-holed loops. Make some small sofa-cushions of the cretonne to place on the couch.

V. Arm-Chair

Materials. — Cardboard. — Cretonne. — Cotton batting. — White thread, No. 80.—Needles, No. 8.—Thimbles.

Cut two pieces of cardboard (see Fig. 65 *a* and *b*) and two pieces of heavy paper to match. Cut four pieces of cretonne the same shape as the cardboard and one-quarter of an inch larger all around. Lay several thicknesses of cotton over the cardboard, and lay one set of the cretonne pieces on these and fasten them by using long stitches at the back (see Pin

Ball, Chapter IV). Fasten the other pieces of cretonne to the paper in like manner. The back and seat of the chair having the cotton padding may be tufted before putting the pieces together. Lay the two sets with the wrong sides together and with an overhand stitch sew around both pieces. Cut a little strip of the cretonne three inches deep and nine

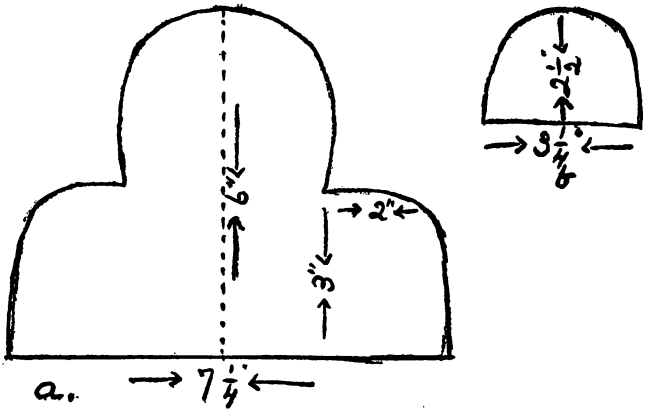


FIG. 65.

inches long, hem it at the bottom and sides, box-plait it, and sew it to the front of the piece for the seat. Tack the back of the seat to the middle back of the chair with a few strong stitches. Bring the arms around, and fasten them to the front of the seat. The shape of this chair may be varied by changing the dimensions of the diagram.

VI. Wicker Table

Materials.—No. 3 rattan, 6 pieces, 22 inches.—No. 3 rattan, 1 piece, 12 inches.—No. 2 rattan, 1 weaver.—A few strands of raffia. Approximate cost..... .03

Any child who has woven a mat with rattan can make a table for the house, as the principle is the same. Cross the

six pieces of No. 3 rattan in the centre, three and three, and lay the twelve-inch piece between one set. Take the weaver of No. 2, which has been well soaked to make it pliable, and hold it beneath the under set of spokes and then bring it over the upper set. Pass it under the next set and over the next, keeping it as close to the crossing as possible. Do this twice around, and then begin to separate the spokes and work them singly (see Fig. 66). If this is done carefully the weaving will come out in the correct way, *i.e.*, the weaver will pass over the spoke it went under before, and under the spoke it went over before. Continue in this manner until the mat is about three and one-half inches in diameter. Make a border in the following manner: Bring spoke No. 1 over the next spoke to the right and push it through the weaving on the under side of the mat for about three or four rows. Do the same thing with spoke No. 2, and continue it around the entire mat. The last spoke will go through the loop formed by the first one. When all the spokes are through to the wrong side, pull them taut; this will tighten the border and make it more firm. These spokes are to form the legs of the table. Decide whether you are to have three or four legs and group the spokes accordingly. The extra one can be cut away or bound in with one of the groups. Even the legs before you begin to finish them. Take a weaver of rattan, begin at the top close to the mat and wind over the entire length of the group, leaving a small space between each winding. At the lower end take a half hitch (see Fig. 5) and wind back to the top; filling in the spaces, fasten it off by running the rattan into the weaving. Do this to each leg or group. If the table has four legs, a smaller mat may be made, and

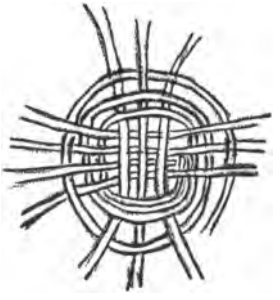


FIG. 66.

fastened in, lower down, to form a shelf. If it has three legs, it is well to bind them together, part of the way down, as that will make the table more firm.

Stools, and stands for flowers, may be made in the same manner, by cutting the spokes a few inches shorter, and making the mat smaller in diameter. It is well in these to bind a ring of rattan inside of the legs about half-way down; this will help to strengthen them. Chairs may also be made by cutting one of the spokes about seven inches longer than the others and, instead of binding it in with the rest to form the legs, bring the two long ends to the right side of the mat and use them for the back of the chair. Insert three extra spokes of No. 3 rattan between these, and with a weaver No. 2, weave back and forth, until within one and one-half inches of the top of the side spokes. Push the end of the weaver down beside a spoke to hold it, bend the two outside spokes over so that they cross at the centre, and push the ends down at the outside. The three centre spokes are to be cut off even with the weaving.

Braided raffia makes a pretty weaver and is a little easier for children to use; a fine three-strand braid is the best for this purpose.

VII. Arm-Chair

Materials.—No. 5 rattan, 1 piece, 8 inches.—No. 5 rattan, 2 pieces, 5 inches.—No. 1 rattan, 6 pieces, 9 inches.—No. 1 rattan, 28 pieces, graduated, 2 of each from 10 to 18 inches.—No. 1 rattan, 3 weavers. Approximate cost. .05

This little chair is more difficult to make than the preceding one, and therefore will be better work for older children, especially boys.

Bend the eight-inch piece of No. 5 rattan to form a bow, and tie the ends together with a piece of raffia (see Fig. 67 *a*). Tie the six nine-inch pieces to the curve or back of the bow in the following manner: Bring one end over the piece of No.

5 rattan, then around it and over itself; hold the short end in place and fasten on the next one, which will go over the first end and hold it in position (see Fig. 67 *b*). Continue until you have tied on five in this manner. In tying on the sixth one the short end is brought over in the opposite way and the end worked into the knots formed by the others. Take a weaver of No. 1 rattan, double it about ten inches from one end, put the loop thus formed around one outside spoke, and work across once with paired weaving (see Fig. 14). After this, use plain weaving until the seat is finished, *i.e.*, until the ends of the No. 5 rattan are reached. Bend down the ends of the long spokes, and put in the twenty-eight

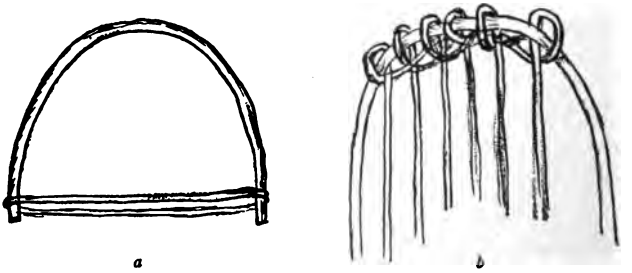


FIG. 67.

pieces of No. 1 rattan. These are to graduate from ten inches to eighteen inches, and are to form the back and arms of the chair; they must be put in with that idea in view. Begin with the shortest, and gradually increase the height until the middle of the back is reached, and then decrease toward the front. These extra spokes are pushed down between the weaving close to the piece which forms the edge of the seat, and are spaced alternately first one weaver apart, then two weavers. They are pulled through even with the spokes which form the front of the chair. Insert the two five-inch pieces of No. 5 rattan at each side of the front. Take a weaver of No. 1 rattan, double it in the centre and slip it over one of these spokes. Put four rows of paired

weaving, enclosing two spokes at a time, except across the front where the spokes are worked separately; fasten off the weavers by working them into the weaving. Insert an extra spoke at the side of each of the front ones, pushing it well up into the weaving. One-half inch below the last row put in two more rows of pairing. Cross the spokes (see Fig. 68) and weave two more rows to form the base of the chair. Finish the base with the following border:

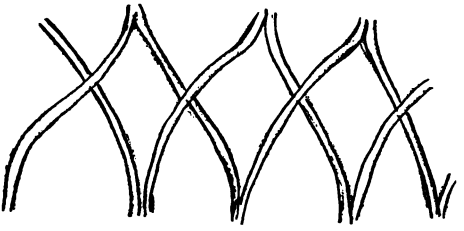


FIG. 68.

Take two spokes together and put them over the next group to the right and then inside of the base; do this all around, bringing the last set through the loop formed by the first set. After the chair is dry, cut these spokes off to within one-half inch of the border. For the arms and back, cross the spokes in the same way as for the base; double a weaver of No. 1 rattan, slip it over one of the uprights at the front of the chair, and put two rows of pairing about one inch from the seat. When the opposite upright is reached turn the weavers, and weave back, gradually separating them from the first row to form the high back (see Fig. 69). Before coming back with the third row cross the spokes again and separate the rows as before, the fourth row is pressed down close to the third. The same set of weavers is used all through the upper part of the chair, as they turn and come back each time.

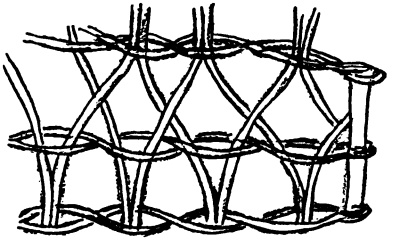


FIG. 69.

The top is to be finished with the following border: Take each group and put it back of the next group to the right and out; do this all around the top. At the end bring the last pair all the way around, and place it under the next group to the right and up. Continue similarly across the border. When the rattan is dry cut the ends to within one-half inch of the weaving.

VIII. The Pictures

Materials.— Perry pictures.— Glass.— Cardboard.— Black or white paper for binding.

The Perry pictures, which sell for half a cent apiece, make very attractive decoration on the walls of the doll's house. They can be framed in the following manner:

Have a piece of glass cut the exact size of the picture, and cut a piece of cardboard the same size. The strips to bind the edges should be about one-half inch wide. The passe-partout binding that comes prepared for mounting is about one inch wide; this can be cut in half, and is easier to use than that which is cut from a sheet of paper. Cut two strips the exact length of the longest way of the picture. Have the glass, picture, and cardboard fitted carefully together and lay them glass upward on the table or desk. Put the paste on one strip and lay it on the glass, one-eighth of an inch on the edge of the glass and the rest of the paper extending over the edge. Press it down carefully, then raise the glass, picture, and cardboard, and put the paper down on the wrong side, pressing it over the edge as snugly as possible. Take a cloth and rub it quickly but lightly, the whole length, for several times. This gives

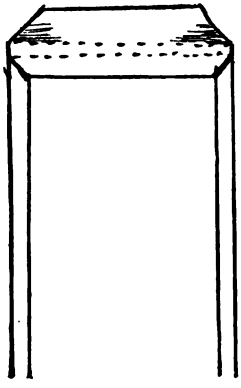


FIG. 70.

a good finish to the edge. Do the opposite side of the picture in the same manner. This will hold the materials together firmly. Next cut two pieces which will exactly fit the short sides. Before putting on the paste lay them on the glass so that they match the binding on the other sides, and mark the corners to form mitres. Cut off this small point, and one a little larger from the other side of the strip (see Fig. 70). Paste these strips on in the same manner as the first two. The corners are the most particular part of the work, but if care is taken in cutting the strips to have them the exact length of the glass, very little trouble will be found. Always paste the strips of paper on the two long sides first.

CHAPTER X

SIMPLE UPHOLSTERY FOR HOME USE

WORKERS in settlement schools have for some years been teaching the children to become home-makers. Simple work in upholstery, when presented in an interesting way, offers unusual facilities in this direction, and certainly develops an amount of interest in home things which cannot fail to make the child more helpful and useful later on in life. The work may be learned in a very simple way, in relation to furnishings for a doll's house. Simplicity in furnishings, cleanliness in relation to choice and arrangement of materials, adaptation of things to use, planning with relation to economy of time and energy in their cleaning, may be incidentally taught in connection with the upholstery work.

I. Lace Curtains

Materials.—Cream-white Brussels net.—Unbleached mercerized cotton.—Piece of rattan for pole. Approximate cost per child..... .06

Measure the windows of the house for the length and width of the curtains. Turn a half-inch hem along the length on one side, and a quarter-inch on the other. Use the mercerized cotton double, and catch the hems down with the running or a fancy stitch. Turn a one-inch hem at the bottom, and finish in like manner. The top may be finished with a frill, in which case turn over one inch, turn in one-quarter of an inch, and fasten with a running-stitch done with No. 60 cotton. Put an-

UPHOLSTERY

1. Lace curtains.
2. Bagdad.
3. Lined portière.
4. Chair-cover.
5. Mattress.
6. Seat-cushion.

other row of stitches one-quarter of an inch from the last, to form a casing for the pole. Run the curtains on the pole, and make the tie-backs of cord and tassels. If no frill is desired, a casing that will admit the pole easily is made at the top. Care must be taken to have the curtains made in pairs; the cost will depend on the size.

II. Bagdad Curtain

Materials.—Java canvas, 2½ x 14 inches, 5 or 7 colors.—2 skeins Poseidon cotton.—Chenille needles, No. 2.—Thimbles. Approximate cost per child..... .11

This article makes excellent cooperative work, as five or seven children can work in a group, each making a stripe for the curtain, which can be sewed together with an overhanding stitch by the teacher.

Turn over the long edges of each strip one-quarter of an inch, baste, and fasten it down with an overcasting stitch (Fig. 32) done in Poseidon cotton. Work the length of the strip, then turn and come back, crossing the stitches; this forms a border on each side. The decorations through the centre should be left as far as possible to the children, as they will surely make some primitive designs. These designs may be worked with simple stitches: running, back-stitching, and the cross-stitch adapt themselves nicely to this style of decoration.

Care should be taken in choosing the colors of the Java canvas to be placed together, and also in the arrangement of colors for decoration; a little black may be used effectively.

In joining the stripes together to form the curtain, arrange them so that the colors harmonize.

When finished, this may be used as a couch-cover or a door-curtain in the doll's house.

III. Lined Portière

Materials.—Burlap or denim, 15 x 20 inches.—Single-faced Canton flannel, 13 x 18 inches.—Sateen, 15 x 20 inches.—Heavy mercerized cotton.—Black San silk.—6 small brass rings.—No. 60 white cotton.—No. 8 needles.—No. 6 crewel needles. Approximate cost per child..... .10

The measures given above make a curtain of good proportions; but if it is to be used in a certain place, let the children take their own measurements.

The decoration can be of denim applied and couched on (see Bag, Chapter III), or the design may be simply couched on the material, using the heavy mercerized cotton and San silk. In making the design for the curtain there are several things to

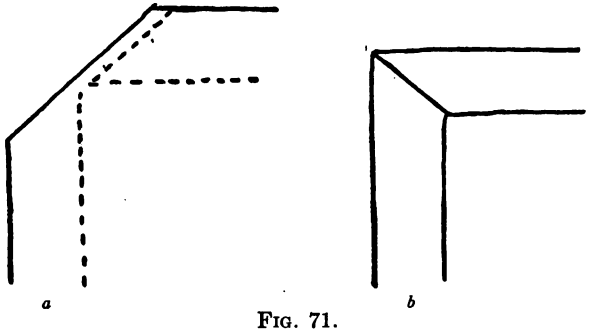


FIG. 71.

be considered, such as appropriateness, space, size, and use; combination of color is very important, and harmony with the surroundings.

After the decoration has been placed on the curtain, put it face down on the desk or table, and lay the piece of Canton flannel on top, leaving a one-inch margin all around. Turn over the edge of the outside material, pin and sew down to the interlining with a coarse slanting stitch. The corners should be mitred (Fig. 71). Lay the sateen over the interlining, turn in the edges, leaving a half-inch margin; pin, baste, and

hem down. Finish at the top by laying six plaits, and sew on the brass rings so that the top of the ring touches the top of the curtain. Rods to hang them on can be made of dowel-sticks cut the length of the door-casing and stained to match the wood of the house. Use brass screw-eyes for brackets; a brass-headed nail will make a nice finish for the ends of the rods.

IV. Slip-covers

Materials.—9 inches of narrow striped furniture-linen.—1 piece of one-half inch tape.—No. 80 cotton.—No. 8 needles.—Thimbles. Approximate cost per child.. .10

Covers for small chairs may be made in the same manner as large-sized ones. Measure the depth and width of the chair-seat at the front and back, and cut a piece of paper a little larger. Measure the back, and if the chair has arms measure those also, and cut a pattern from paper. There must be two pieces for the back and each arm—one the exact size and width for the inside, and the other enough longer to fall below the seat nearly to the floor, for the outside. The same amount must be added to the front of the seat, and can either be cut on or joined with a seam. This will give the approximate size and shape of the cover. To get an exact fit for the chair, cut out the pieces of linen, using the pattern (care should be exercised here to have children cut economically). Baste the short back- and arm-pieces to the back and sides of the seat, and the front piece, if that has been cut separately. Put on the chair, and pin the long pieces for the back and arms to the other pieces, and fit around any irregularities in the chair. Cut the back up through the centre, and if there is width enough lap it a little at the top. Finish the cover all around with a binding of narrow tape, and sew three sets of tapes on the opening at the back, in order to tie it together. Where the pieces are joined to the seat, the seams are on the wrong side of the material and should be back-stitched; all

the other seams are on the right side and are covered by the tape. If this article is made by older children the tape may be sewed on the machine; this makes an excellent lesson in stitching.

V. Mattress for Doll's Bed

Materials.—Art-ticking or cretonne.—1 piece of ½-inch tape.—Fine cord for tufting.—Heavy cable-cord for tufts.—Cotton or hair.—Long, slim needle.—Thimbles. Approximate cost per child..... .12

Take the measure of the bedstead, and cut two pieces of cretonne the exact size. Cut a strip one inch wide and twice the length of the first piece, plus twice the width. This forms what is called the box of the mattress, and is to be basted around one of the first pieces cut, with the seam on the right side. Join the strip on one corner with the seam on the inside. Baste on the second piece, leaving an opening of about three inches, where the stuffing is to be put in. Bind the seams with tape; stitch it on the machine or run it on by hand.

The mattress may be filled with hair, cotton, or excelsior; it should be stuffed as full as possible, and as evenly, especially at the corners. Join the opening and bind it. Before the tufts are put in, divide the mattress and space the marks for the tufts evenly; these may be put in in diamonds or squares. Cut the cable-cord into inch lengths; it will take about two pieces for each tuft. Thread a long piece of string into the needle, and put it through at the first mark for a tuft; bring it back again to the place where it went in, but leave a short stitch on the opposite side to keep the string from pulling through. Tie the ends once, pull as snug as possible, lay in a tuft, and tie with the square knot (see Chapter II). Continue until all the tufts have been laid in; for a mattress 9 x 7 inches, twenty tufts will be enough.

The sides are held in place in the following manner: Thread a needle with a long string, and start it at the corner tuft.

Put the needle in on the slant, bringing it out in the box (or side) half-way to the next tuft; put it in again, leaving a short stitch, and come out at the next tuft. This is done all around the mattress. A double row of these stitches may be put in, one row on each side; this is not necessary, however, where they are small. Upholsterers use a double-pointed needle, but these would be rather difficult for children to handle. These mattresses make excellent work for older boys.

VI. Cushion for Chair or Seat

Materials.—Unbleached muslin.—Denim.—Excelsior or cotton batting.—Buttons for tufting.—Long, slim needle.—No. 50 white cotton.—Silk to match denim. Approximate cost per child..... .05

This little cushion may be used for several purposes, such as window-seats, chair-cushions, and cosey-corners. The measures are taken the same as for the mattress, and the pad made in like manner, using unbleached muslin in place of ticking, and sewing the seams on the inside instead of the outside. Use excelsior or cotton for filling, and tuft, using linen thread in place of string. Tie the ends together without using the tuft of cable-cord, as this is done simply to indicate the position of the buttons, which are put on after the outer covering is in place. Do not put the tufts as close together as in the mattress. After the pad is finished, take the measures for the outside. These consist of twice the width, the length, and twice the height of the box. Allow one inch on all measures for the tuck which is to be taken all around the edge of the cushion. Twice the height of the box must also be added to the length. Begin at the short side, and take up a one-quarter inch fold, baste, leaving a piece for the box, and tuck at each end (Fig. 72). From the basting, measure out the width of the cushion, allow one-quarter of an inch tuck and baste; then measure out the width of the box, again allow a tuck and

baste; then the width of the cushion, and again allow a tuck and baste. This gives the covering for the two sides, and the boxes at the side. To fit the cushion to the pad exactly, measure on the long side the height of the box, allow a tuck and baste only between the tucks formed by the top of the cushion. From that basting measure the length of the cushion; allow a tuck at the other end and baste. These tucks should be stitched or run after they are basted; the corners should be cut out, and the edges turned in and stitched together. Where the two end-pieces meet they can be slip-stitched. Also use the same finish at the side. The buttons are put in at the last. Thread a long, slim needle with a fine string or linen thread, put it through the cushion from the under side where the tufts have been made; put the needle through the cloth shank of the button and down through the pad again, and tie the ends with a square or hard knot (see Hard Knot, Chapter II).

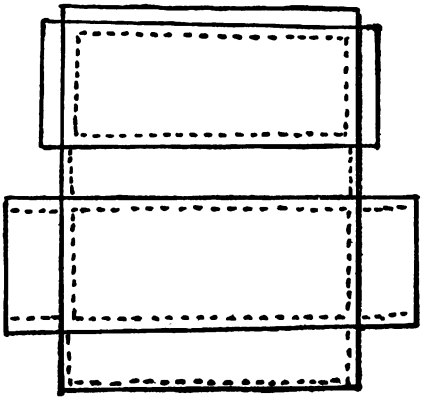


FIG. 72.

VII. Cover for Pillows

Materials.—Holland linen.—Tape or buttons.—White cotton, No. 80.—Needles, No. 8.—Thimble.

These covers may be made in any size desired. They are to cover sofa-pillows, in order to keep them clean in summer, or when the room is being swept. Take a piece of linen the width of the pillow and twice its length; allow one-half inch

on the width for seams, and about five inches on the length for hems and lap (these measures are given for full-size pillows). Fold an inch hem at both ends of the strip, and stitch or hem by hand. Lay the strip together wrong side out, letting one end extend three inches beyond the other, and sew together with one-quarter inch seams. Put a narrow hem corresponding to the width of the seam on the three-inch lap for a finish. Turn the case right side out and sew on three sets of tapes to tie, or make three or four button-holes in the lap and place buttons on the case.

CHAPTER XI

CROCHETING AND KNITTING

WHEN our grandmothers were young all little girls were taught to knit and crochet, for all the family stockings and mittens had to be made at home. It was not possible to go to the stores and buy them, as one can at present. Little children in foreign countries are still taught to knit, and it is quite a common sight in Holland to see them playing in the streets with their knitting in their hands.

In the following chapter it is impossible to mention all the many articles that can be made with simple knitting and crocheting, so only a few suggestions are given, which will prove interesting to the children. Any directions for large-sized articles may be used for dolls by making them just half size.

I. Doll's Tam-o'-Shanter

Materials.—Columbia yarn, ½ hank.—Bone crochet-hook, No. 4.—Approximate cost per child..... .02

If the children have made the chain-stitch in the cord-work, it will be very easy to show them the connection between it and crocheting. The stitch is the same, but a needle or hook is used in drawing the loop through, in place of the fingers. Set up a chain of five stitches and join in a circle by drawing the last loop through the first one made. Then begin widening by putting two stitches in every stitch for two rows around. On the third row widen every other stitch. After that widen only occasionally in order to keep it flat and round. It may be worked in points by increasing the number of plain stitches

between the widenings, by one extra stitch each row. The needle may be put through one side of the stitch only or both, the latter will make it a little firmer. When the Tam is large enough, make two rows of plain crocheting without widening, then begin to narrow. This is done by placing the needle through two loops instead of one, and pulling the new loop through both at once. Narrow every third stitch until the head size is the right proportion for the top, then crochet three or four rows plain. Finish by pulling the finishing end through the last loop, and working it into the crocheting. A little ball may be made for the top in the following manner: Cut two circles of cardboard about one inch in diameter. Make a hole in the centre with the scissors and sew the wool from the centre around the outside of the cardboard (see Fig. 73). Fill as full as possible, then cut the wool around the outside edge, separate the cardboards, and tie a piece of wool around the centre. Tear out the cardboard and trim the ball into shape. Sew it to the top of the Tam with the end of wool which was used to tie it at the centre. These Tams may be made to fit the children by following the same directions and working them out to the proper size.

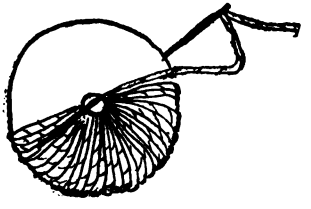


FIG. 73.

II. Doll's Slipper

Materials.—Columbia yarn, ½ hank.—Lining to match wool.—Eider-down flannel, white.—Cardboard.—Needle, No. 8.—White cotton, No. 70.—Thimble. Approximate cost per child..... .06

These little slippers will teach a slightly different method of work from the Tam just described, as the work is done from side to side instead of around in a circle.

CROCHETING AND KNITTING

1. Tam-o'-Shanter.
2. Slippers.
3. Under vest.
4. Baby sack.
5. Scissors protector.
6. Wash cloth.
7. Doll's hood.
8. Wristlets.
9. Afghan.
10. Sweater.

Set up a chain of six stitches, leave out the last stitch made, and crochet into the next two, then widen in the next and then make two more plain stitches. Take an extra stitch at the end of each row. Turn the work and crochet back, widening in the centre stitch each time. In order to form the rib, take up the side of the stitch away from you each row. Make five ribs or ten rows of crocheting; this forms the vamp of the slipper. On the eleventh row, crochet only eight stitches, and rib back and forth for thirteen ribs, or until the slipper is the size desired. Join this finished end to the opposite side of the vamp. With a double crochet, *i.e.*, throwing the thread around the needle once, pulling it through one loop, and then through two (see Fig. 74), work around the upper edge of the slipper, catching it into each rib; put a single stitch between each double one. This forms the beading for a ribbon or cord and tassel.

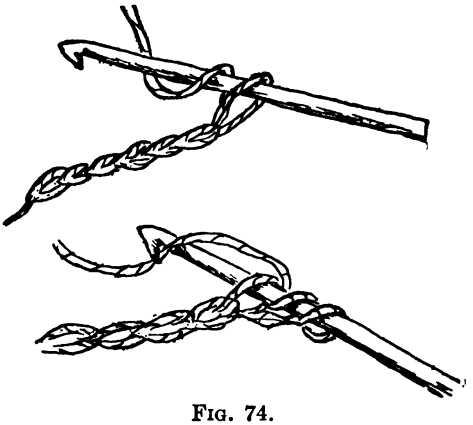


Fig. 74.

For the border put four double crochet stitches in each space and catch them down with a single stitch.

Fig. 75.

In order to cut the sole, shape the crocheted slipper in the form of a foot, lay it on the cardboard, and draw around the outside (see Fig. 75). Cut it out on this line; cut the eider-down the same size, and the lining one-quarter of an inch larger all around. Put a row

of gathering around the lining, slip in the cardboard and sew in the same way as the pin-ball (Chapter IV). Paste the eider-down flannel on it and sew the slipper to the sole from the wrong side. Turn it, and finish at the top with a ribbon bow and elastic, or with cord and balls.

If these are to be made for the children to wear, set up more stitches in starting, and increase the number of rows in the vamp also the number of stitches at the side and the number of rows.

Lamb's-wool soles can be purchased for about 15 cents.

III. Doll's Undervest

Materials.—Saxony, threefold, ½ hank.—Bone crochet-hook, No. 2.—White baby-ribbon, ½ yard.—Approximate cost per child..... .06

This little undervest is very attractive when finished, and will provide good work for the children in teaching them to work from printed or written directions, which can be dictated or written on the board. If the directions given below are followed carefully, the work will be found quite easy.

Set up eighty-six stitches. Make six rows of single crochet, taking up the back of the stitch and working lengthwise of the vest. Work one side first, making thirty-eight stitches of single crochet. Make nineteen rows and fasten off. Leave ten stitches on the long band for the neck and crochet thirty-eight stitches. Crochet nineteen rows; at the end of the nineteenth row make a chain of ten stitches for the neck. Join it to the other side and make six rows to match the other shoulder. Crochet the sides together, leaving one and one-half inches for the armhole.

To finish the sleeve: Make one double crochet into the second stitch, and one double crochet into the first stitch, all around the opening. Then finish all around the sleeve by

making one single crochet, two chain, two double crochet in the same stitch.

Neck: One double crochet, one chain-stitch over every rib, and then finish like the sleeve.

IV. Cover for Scissors-Protector

Materials.—Florence knitting-silk.—Steel crochet-hook.—Small cork. Approximate cost per child..... .01

Set up a chain of three stitches, join it same as the Tam-o'-Shanter. Crochet several rows, widening to keep it flat, and taking it through both sides of the stitch at once. Make this piece large enough to cover the small end of the cork; then work around without widening until it is deep enough for the side. Finish it off by drawing the last stitch through, leaving an end of silk long enough to run through the last row of crocheting. This is to draw the case up after placing it over the cork. Make a little tassel of silk and sew it on where the work was started. Slip the case over the cork, draw up the silk and fasten off with a few stitches; work the end into the crocheting.

V. Baby-Doll's Sack

Materials.—White Saxony, ½ hank.—Colored Saxony, ⅛ hank.—Bone crochet hook, No. 2. Approximate cost per child..... .06

The yoke of this little sack is to be made with the color, and the lower part with the white.

Make a chain of thirty-three stitches. Three rows plain, single crochet, taking up back of stitch to form rib. In the fourth row widen on eighth and tenth stitches, and have thirteen stitches between, on back of yoke. Also widen on the eighth and tenth stitches from the opposite front.

Widen every row, having first two stitches between the widenings, then four, six, eight, ten, twelve.

Always keep thirteen stitches between the widenings on the back, and the first widenings on the eighth and tenth stitches from the fronts.

Jacket: Begin with a shell of four double crochet in every third stitch of the yoke, until you reach the first point of the yoke; then make a chain of nine stitches and carry it on to the other point of the yoke, with a shell in every third stitch until you reach the third point of the yoke. Make a chain of nine stitches, carry it to the fourth point of the yoke, join with a shell and make a shell in every third stitch across the second front. Make a chain of three and turn and put shell on shell until you reach the chain on which you put three shells; then shell on shell across back, three shells on second chain, and so on across the second front. Make the jacket eight shells deep.

Sleeve: Join in the wool under the arm, and make shell on shell on jacket, and a shell in every third stitch of the yoke from the first row, seven or eight shells in all. Then six rows, shell on shell.

Around the bottom of the jacket and sleeves put a row of five double-crochet shells. Around the neck put a row of holes for a ribbon, formed by one double crochet and one chain; repeat across the neck and finish with a row of five double-crochet shells. A row of color may be carried all around the jacket by using a single crochet in each stitch of the shell.

VI. Spool-Knitting

Materials.—Empty spool.—Pins or nails, 5 or 7.—Wire hair-pin.—Colored wool.

Take a large empty spool and place the pins at regular intervals around the hole at one end. Push these in securely, as quite a little strain will come on them. Thin nails with small heads may be used in place of pins.

Take the odd pieces of worsted that are left from other

work, tie them together and wind in a ball. Pass one end through the hole from the end where the pins are, and wind the worsted twice around the pins, going in front of one and back of the next each time (see Fig. 76). Then pass the worsted outside of all the pins. Take the loop that is on each pin and slip it over the head; use the hairpin for this purpose. Keep passing the worsted around the outside of the pins and slipping the stitches off in regular order. This knitting may be made in long strips and used for horse-reins and mats, or in short strips and used for doll's golf-stockings. To finish it off: Break the worsted, leaving about ten inches; thread the end in the needle and take up the stitches from pins. Draw them up and fasten securely.

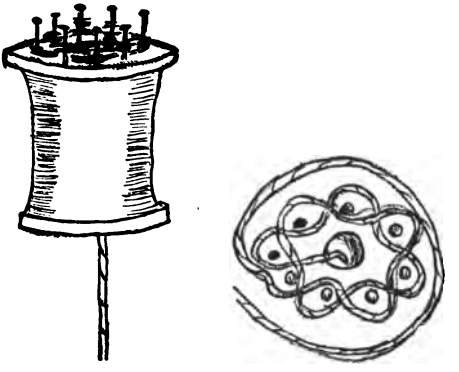


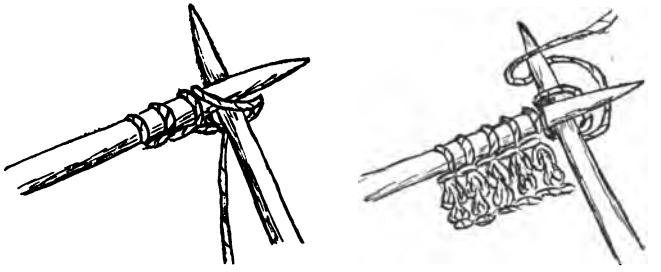
FIG. 76.

VII. Wash-Cloth

Materials.—Dexter knitting-cotton, No. 12.—2 bone knitting-needles, No. 4. Approximate cost per child..... .02

Set up forty stitches in the following manner: Make a loop, slip it on the left-hand needle, and slip the right-hand needle into the loop from front to back. Put the cotton over the point of the needle from underneath and draw it through the loop. Slip the loop from the right-hand needle on to the left. Put the right needle through the second loop and do the same again. Continue until enough stitches are on the left-hand needle (see Fig. 77, *a*). Having the required number of

stitches on the left-hand needle, put the right-hand needle into the back of the first loop, from the front toward the back. Throw the cotton over the needle and take up the stitch on the right-hand needle, slipping the stitch from the left-hand one (see Fig. 77, *b*). Repeat until all the stitches are on the right-hand needle, then change needles and proceed as before. In plain knitting always slip off the first stitch. In order to slip a stitch, slip from one needle to the other without knitting. Knit back and forth until you have a square, then bind off in the following manner: Slip the first stitch, knit the second, and with the point of the left-hand needle slip the first stitch



a *b*

FIG. 77.

over the second, leaving one stitch on the needle each time. Knit the next stitch and slip the one on the needle over it. Continue until all the stitches are bound off. This should be done rather loosely or the edge will draw.

Put an edge of one double and one single crochet all around. Then make a scallop of four or five double-crochet stitches in each space, catching them down with one single crochet-stitch between each group.

Little afghans may be made in the same manner by using two colors in Saxony yarn, and knitting two squares the same size. These are placed together and a scallop put around the edge.

VIII. Doll's Hood

Materials.—Shetland wool, ¼ hank.—2 bone knitting-needles, No. 6. Approximate cost per child..... .04

Set up forty-five stitches and knit back and forth plain for thirty rows. Bind off loosely. Fold the two sides to meet in the centre, sew them together, and then fold the sides together and sew at both ends through four thicknesses (see Fig. 78, *a*, *b*, and *c*). Catch together the points of the two seams

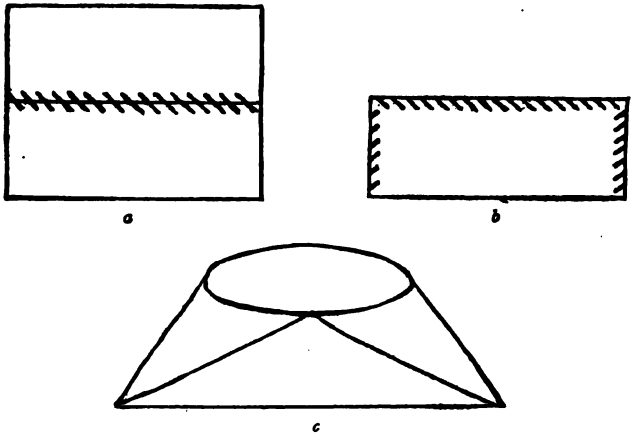


FIG. 78.

just sewed, and turn so that the seams are on the inside. Fold back the front of the cap and run in a ribbon at the back to draw it in at the nape of the neck and to form the strings. Place a little bow on the top.

IX. Wristlets

Materials.—Columbia yarn, ½ hank.—2 bone needles, No. 4. Approximate cost per child..... .05

Set up thirty-six stitches, knit two and purl two. To purl, bring the wool from the back of the needle to the front; take

up a stitch with the right-hand needle, putting it in from the right side or toward the knitter. Throw the wool over the needle from the back toward the front, draw it through and slip off the stitch. Be careful always to carry the wool back of the needle before beginning to knit plain again after purling. After finishing one row, turn the work and begin the next row by slipping the first stitch and knitting the second, then purl two and continue as in the first row. When the wristlet is about four inches deep bind it off loosely and sew it together on the sides.

Two colors may be used, putting in the second color as a border, top and bottom.

X. Doll's Sweater

Materials.—White Saxony, ½ hank.—Colored Saxony, ¼ hank.—2 bone knitting-needles, No. 4 or No. 2.—2 steel needles, No. 16. Approximate cost per child..... .06

This little sweater is very attractive and, although more complicated than the preceding articles, can be made by older children with very little trouble if the following directions are carefully noted:

Set up thirty-two stitches, knit two, purl two, for fifty rows.

Fifty-first row: Knit two, purl two for eight stitches, bind off sixteen stitches, knit two, purl two for eight stitches. Knit the first eight stitches back and forth in rib style, two and two for seven rows. With an extra needle, knit on the opposite side eight stitches until you have four rows; bind off. Cast on the extra needle eight stitches, knit back and forth with rib of two and two until you have four rows. Join this small piece to the body by casting on sixteen stitches to correspond to sixteen stitches which were bound off. Continue with rib of two until you have fifty rows.

Collar: Pick up the stitches around the neck, and with color knit one, purl one, using smaller needles for two rows, then

use white for two rows, until you have three rows white and three rows color; the last row of color will make three rows; then bind off.

Sleeve: Divide the body in half, take up two loops on each side, knit two and purl two, using both sides of the stitch, making eight stitches. At the end of the row pick up another stitch and in this loop make two stitches, knitting across again with a rib; pick up the loop on the other side, making in it two stitches to correspond with opposite side. Continue thus, picking up a loop and making two stitches at the end of every row until you have thirty-two stitches on the needle, then continue plain rib of two and two until you have twenty rows. With color and small needles knit one, purl one, knit two together, and so on across the needle, turn and rib one and one using color, same as in the collar. The sleeve may also be made by taking up the thirty-two stitches at once, and knitting twenty rows; this will make a sleeve without any fulness at the top. Close the seam from the edge of the cuff to the bottom of the body on both sides. Crochet loops and place the buttons on the shoulder.

CHAPTER XII

SOME SPECIAL WORK FOR BOYS

Boys' occupations must at times differ essentially from those presented to girls. This chapter offers some special suggestions for them, but they may also be worked out by the girls. The penknife is particularly appealing because it presents such a wide field for experiment and exploration. Scissors, and the mucilage-pot follow in order, and help to add to the intensity of interest.

The nearer the approach made to real life in the articles produced, the greater is the degree of attention which is developed in the boy. With wood, hammer, and nails, the scope of the work can be made very broad.

The following articles are suggestive and very easily made. It is well, as far as possible, to allow the boys to carry out their original ideas in regard to construction and decoration.

I. Jacob's Ladder

Materials.—1 strip of heavy paper, 3 yards x 6 inches.

The Jacob's ladder, as illustrated in Plate XIV, No. 1, was a favorite pastime of children a decade or more ago. It is easily made, and a particular delight to boys.

Roll the strip of paper, which may be composed of a number of colors pasted together, into a hard cylindrical roll. Paste the end to keep it in place. With a sharp penknife cut the roll, as shown in Fig. 79. Care must be taken to cut only half

way through, or, in other words, only to the centre of the cylindrical roll. Bend it in half, as in *b*, Fig. 79, and open until the centre of the roll is visible. Take hold of the topmost layer of paper in the centre and pull up the ladder, which is formed by the successive layers of paper.

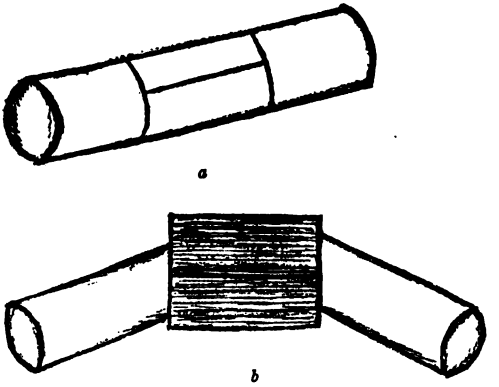


FIG. 79.

II. The Palm-Tree

Materials.—1 strip of heavy paper, 3 yards x 6 inches.

The paper tree is made in a manner similar to the Jacob's ladder. Roll the long strip of paper until it forms a tight cylindrical roll. After the end of the strip has been glued, the roll is prepared for cutting. This is done from the end instead of the middle, and only one cut is necessary. Fig. 80 shows the roll and the line marked for cutting. The length of the cut should be half the depth of the whole roll.

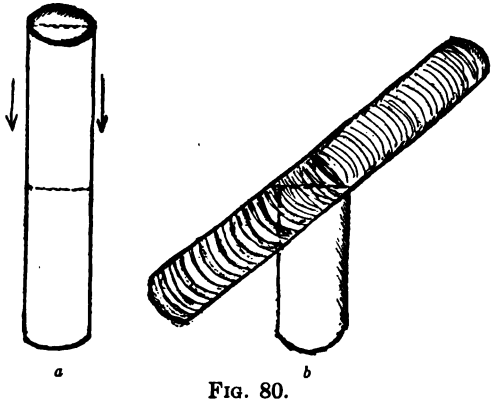


FIG. 80.

WORK FOR BOYS

1. Jacob's Ladder.
2. Palm-tree.
3. Soldier Cap and Epaulets.
4. Kite.
5. Marble-bag.
6. Ball-cover.
7. Sail-boat.

Turn the pieces cut back in position (see Fig. 80 *b*) and pull out the tree by taking hold of the innermost layer of paper. Plate XIV, No. 2, shows a tree which has been made from newspaper.

III. Soldier Hat and Epaulets

Materials.—Sheets of colored paper or newspaper.

Hat: Take two sheets of paper, sixteen by twelve inches, and place one exactly on top of the other. The hat is stronger because of the two thicknesses, but it may be made of only one. If a larger hat is desired, the proportions must be the same; it may be decreased in a similar way. After placing the two pieces exactly together so that it appears as one double sheet, fold it until the two twelve-inch edges lie on each other. Place the paper so that the folded edge is away from the worker. The right- and left-hand corners of this folded edge are to be turned down (see Fig. 81 *a*). After folding the point of the hat in this way, turn up the finishing band at the bottom to complete the fold. This band is folded over twice, and half is turned to each side of the hat (see Fig. 81 *b*). The ends may be finished by gluing them together or pinning them in place.

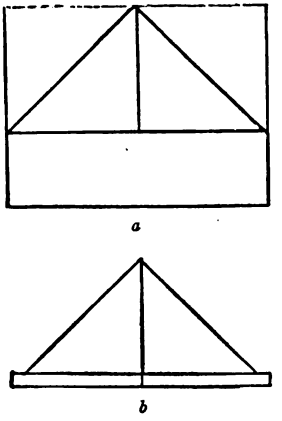


FIG. 81.

A pompon may be added by taking a strip of paper and clipping it with the scissors to make a fringe. This can then be rolled in a cylinder to form the pompon. Pin or sew to the point of the hat.

Epaulets: Cut a pattern according to the size of the epaulets desired. The shape should be similar to Fig. 82.

After cutting the correct size, prepare several thicknesses of the same shape for each epaulet. Sew through the middle of each with a herringbone-stitch, using some bright worsted, and clip the fringe with the scissors (see Fig. 82).

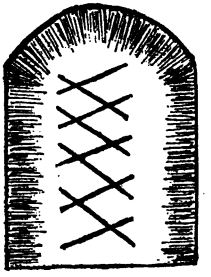


FIG. 82.

IV. A Baseball Cover

Materials.—Heavy felt.—Waxed twine or thread.

There are several ways of covering a ball, but only two of the more simple methods are described below.

Measure the circumference of the ball and cut a paper pattern according to the shape in Fig. 83 *a*, using three-fourths of this measurement for the length and one-fourth for the width in the centre. Two such pieces

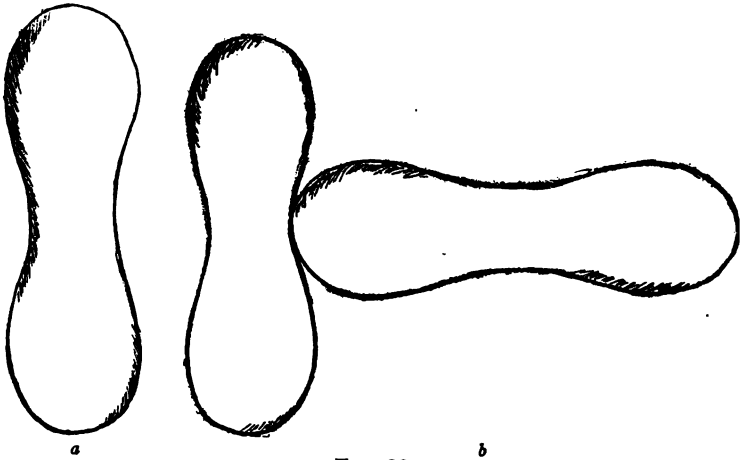


FIG. 83.

will be necessary for the cover, and the pattern will have to be fitted until it exactly covers the surface of the ball (see Fig. 83 *a*). The cover is then ready to be sewed.

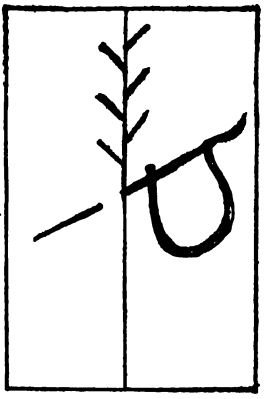


FIG. 84.

Another way to prepare it is to cut two circles of felt and one strip, which must exactly measure the circumference of the ball. One-third of the circumference will give the diameter for the circles. Cut the strip from two to two and one-half inches wide, or according to the size of the ball. Sew it together first and then add the circles.

The drawing-in stitch is used for the sewing of both covers. This is a simple alternating stitch and has the effect of a lacing. For the cover it is taken in a slanting way and a space of one-quarter of an inch is left between the stitches on each side of the edge (see Fig. 84). The needle is put under the edge first to the right and then to the left of the opening, pointing it toward the worker.

V. Paper Kite

Materials.—2 flat sticks, 11 x ¼ inches.—1 flat stick, 8 x ¼ inches.—1 sheet of newspaper or heavy brown paper.—Twine and glue.

The three sticks must be bound together in such a way that the kite will be well balanced. The proportion is about one-third above and two-thirds below the crossing of the third stick (see Fig. 85). Two may be tied together first and the shorter one bound to the others. In the end of each stick cut a slight groove and bind the sticks together with a cord

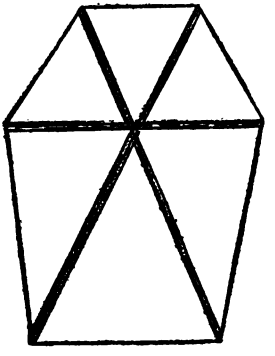


FIG. 85.

(see Fig. 85). When the frame is ready, lay it on the paper and cut out the kite covering—allow one inch on all sides for turnings. Fold this allowance over the cord and paste it down. For the tail a number of rolls of paper two and one-half inches in length may be tied together, leaving a space of about two inches between each roll. The tail is attached to the centre of the balance cord at the bottom of the kite. This cord is put on by making holes in the paper and tying the string around the two bottom sticks; about twelve inches

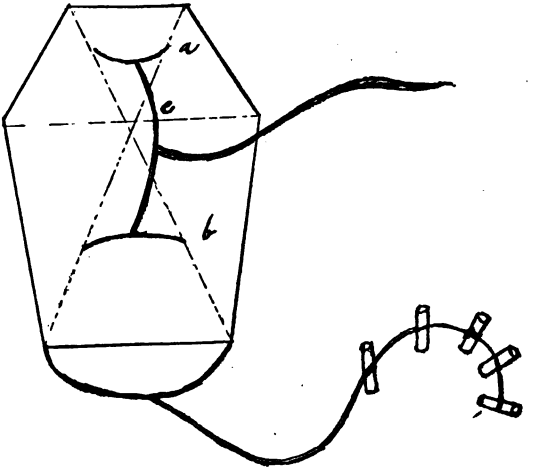


FIG. 86.

of cord are required for this purpose (see Fig. 86). The cord for flying must be attached as follows: One inch from the top of the kite tie the upper cord *a*; this is six inches in length, and the ends are attached to the two upper sticks. Cord *b* is attached to the two lower sticks, and is a trifle longer than cord *a*. Eight inches is a good length in proportion.

Attach *a* and *b* with cord *c*, which is six inches in length, and allows for the pulling of the kite. The fly string is at-

tached to *c*, and should be put on with a slipknot, so that the kite may be balanced in flying. This will depend on the weight of the tail (see Fig. 86).

VI. Indian Tents

Materials.—Unbleached muslin. — 3 sticks.—Water-color paints.

For the small tent shown in Plate XV, No. 4, three sticks, ten inches in length, have been used. These may be bound together loosely four inches from the top.

A circle of muslin, sixteen inches in diameter, will make two tents. Cut the circle in half and remove a small segment from each side of the half (see Fig. 87). Cut a small semi-circular piece from the centre of the original circle, according to Fig. 87. The tent shape is then prepared ready for decoration. The design may be sketched in pencil on the muslin and decorated with water-colors. Plate XV, No. 4, shows a simple decoration made by a child. The tent may be laced together for a short distance at the top with a strip of unbleached muslin.

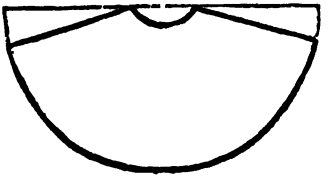


FIG. 87.

The tents may be made any size by piecing the muslin in strips according to the width desired. Three breadths of unbleached muslin, three yards in length, will make a good-size tent. They are, of course, only play tents, but afford much pleasure. Cut five poles about five feet in height. Point the large ends and stick them in the ground so that they meet at the top. Drape the cloth about them, and lace at the top as described.

WORK FOR BOYS

1. Indian Headdress.
2. Indian Belt.
3. Doll.
4. Tepee.
5. Bow.
6. Arrow.

VII. Indian Head-Dress

Materials.—1 strip of Turkey-red, 1 yard x 4 inches.—Chicken feathers.—Large beads, 2 strings.

Prepare the strip of Turkey-red by folding under the raw edges until they lap. Baste, until the sewing of the beads holds them in place. Measure the head size of the child by putting the prepared band around the forehead, and crossing it in the back. The extra length is allowed to hang.

For the decoration, old ostrich plumes or chicken feathers may be used, or even an old feather-duster. Sew the feathers close together and put the ends of the quills on the inside of the band. Decorate the band with the beads. String from six to ten of assorted colors on a strong thread and then take a stitch through the material. This Indian method of work has been described in the chapter on Bead-work (Fig. 57).

Any extra decoration of bead-work, or other arrangement of feathers may be used. The strip may be made two or three yards in length, and the feathers sewed so as to form a head-dress which will extend to the feet.

A belt may be made in a similar way, by measuring the size of the waist and having the feathers arranged to hang down about it.

VIII. Indian Doll

Materials.—Unbleached muslin.—Sawdust.—Paint-box.

Cut a pattern for the shape of the doll by doubling a sheet of paper and cutting a doll as described in the chapter on Paper-cutting. Cut two pieces of unbleached muslin the shape of the pattern, and sew them together all around except on the upper side of one arm and one side of the head. Turn inside out and stuff with sawdust. Sew up the opening left, with an overhand stitch.

Paint the face light brown, and the eyes, eyebrows, etc.,

black. The doll is now ready to be dressed. The trousers are cut from a square piece of material (see Fig. 88). Cut two squares of the same size and remove the pieces of material at the inner curve of the leg. Sew the two thicknesses together around the curve and turn. Sew up the outside seam with running stitches taken one inch from the edge and on the right side of the trousers. Fringe the outside and bottom of each leg and decorate with colored paint.

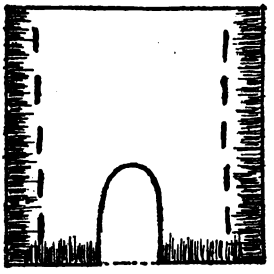


FIG. 88.

The coat is also made from a square piece of unbleached cloth. Cut a pattern from paper first (see Fig. 89) to fit the size of the doll. Cut the muslin according to the pattern. *A* and *b* of the figure are the sleeve portions, and the coat is to be folded on the dotted line. Sew the sleeves and under-arm seam on the right side, one inch from the edge. Clip with the scissors to form a fringe all around the coat, with the exception of the neck and down the front. A red yarn may be used for further decoration, and the fringe and coat painted with the water-colors to match the trousers. Cut out the neck size and punch three or four holes along each front of the coat and lace with the yarn.

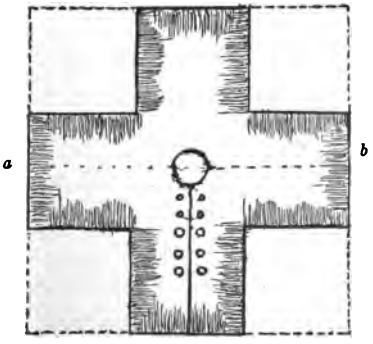


FIG. 89.

The head-dress is made of a strip of muslin clipped to form a fringe and then painted. The strip is sewed around the doll's forehead.

IX. Marble Bag

Materials.—Denim, 16 x 5½ inches.—Poseidon, or ribbon, ½ yard.

Double the oblong of denim so that the two right sides of the material are together. Seam both sides to within two and three-quarter inches of the top, allowing one-quarter of an inch for seams and using a stitching stitch (see Fig. 33). Turn the bag right side out. Bring one and one-half inches of the heading to the right side and seam for one inch at each end. There will be four such seams. Turn the four seams just sewed inside out so that the raw edges come within. Turn the bag again to the wrong side and hem, after making a turning of one-quarter of an inch. One-quarter of an inch above the hemming make a row of running stitches to form a casing. Run in the cord and tie the ends with an overhand knot. A marble bag has only one draw-string.

X. Bow and Arrow

Materials.—1 piece of ½-inch pine, 20 inches.—1 piece of flat ash, 28 x ⅛ x ¾ inches.

The Indians in calculating for the length of their bows measure eight times the span of the hand. This measurement is from the end of the thumb across the palm to the end of the little finger. The arrow is the length of the arm from the thumb-nail to the armpit. Find the middle of the twenty-

Fig. 90.

eight-inch piece of ash which is for the bow. With a knife gradually narrow the width of the stick from the centre toward each end. Do not make it less than one-quarter of an inch in width at the narrowest part. Cut some kind of a fancy shape at each end of the bow (see Fig. 90), and use

sand-paper to smooth the surface. After finishing the outline, the upper side may be decorated with fancy cutting, or paints used to make it more ornate. Tie a string around the neck formed at one end and bend the bow to the right curve. Measure the length of the cord necessary to cross the bow and make a loop at the other end. The loop may be slipped around the neck at the opposite end when it is curved, or removed when the bow is not in use.

The arrow: Whittle the four edges of the twenty-inch stick until it is round. The diameter of the stick at one end for about two inches in length should be one-half of an inch, and gradually slope to the diameter of one-quarter of an inch for the other eighteen inches. Smooth with sand-paper and cut a slight groove in the small end for the cord.

XI. Sail-boat Furnishings

Any sail-boat which is available may be rigged and equipped by the children. It makes excellent cooperative work.

The pattern must first be cut the size of the sails desired. These are made of cotton tape from one to one and one-half inches in width. Baste the tape to the pattern in rows, having the edge of the tape on the outside of the sail pattern —the side away from the mast. Baste the other rows parallel to the first and lap each successive one one-fourth of an inch over the previous row. Hem all the rows flat. Remove the bastings, turn the sail to the other side and hem. This is called counter-hemming. Three sides of the large sail are to be hemmed with one-eighth of an inch hem; the fourth side is the selvage. The jib may be prepared in a similar way to the main-sail.

FIG. 91.

The boat may be furnished with sand-bags for ballast, cushions, and bumpers. They should

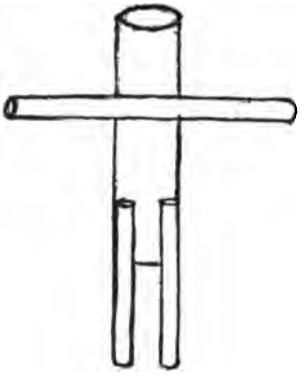


FIG. 92.

be made in proportion to the size of the boat.

The cushions should be cut square and a stitching stitch used in sewing the seams. They can then be stuffed with cotton and overhanded on the fourth side. The sand-bags are oblong in shape and sewed in the same way. Stuff them with sand and overhand the fourth edge.

The bumpers are made of a square of muslin. Sew two of the opposite sides together to make a hollow cylinder. Cut disks of muslin to fit the ends and overhand one to each end of the cylinder. Before sewing in the second one, run in a cord and fill with sand (see Fig. 91).

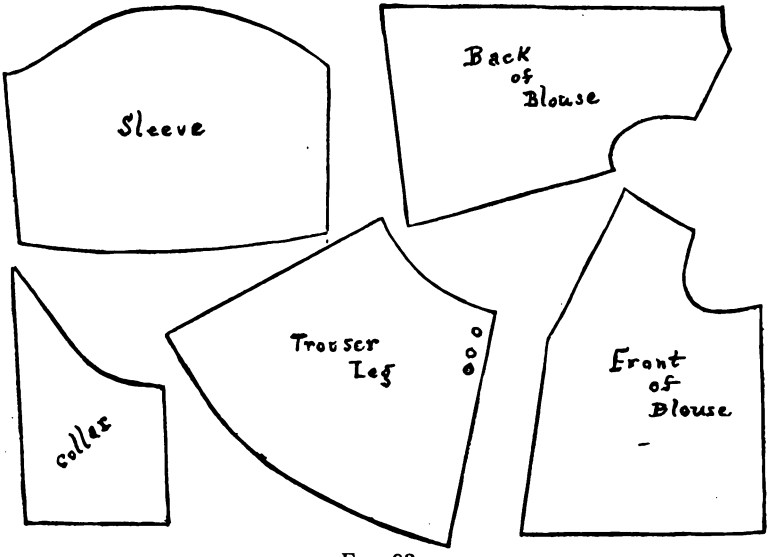


FIG. 93.

The captain of the boat may also be made of muslin. There are four rolls, one for the head and trunk which is about three-fourths of an inch in diameter, and three thinner rolls to form the arms and legs.

In preparing the rolls, they must be wound very tightly and sewed. In rolling, double the roll itself after winding a few times, so as to make it very firm. Sew them according to Fig. 92. Cut patterns for the clothes. Suggestive patterns are offered in Fig. 93; the size will depend on the doll and boat.

Mark the face of the doll with ink, and sew some wool or darning-cotton to the top of the roll for hair.

CHAPTER XIII

HOW TO USE NATURE'S MATERIALS

NATURE is very liberal in giving us materials that can be used by the children in their work or play with very little expense. In fact, we hardly realize how much we have ready at hand unless our attention is especially called to it.

The materials vary in different parts of the country; for instance, in the South there are the pine-needles, the palmetto, the corn-husks, the blue grass of Kentucky, the wistaria, grape-vines, and the rushes. An ingenious teacher, mother, or child will find many others when the possibilities of those mentioned above are learned. As one goes farther North, one finds more beautiful grasses, rushes, birch bark, twigs from the trees, willows, grape-vines, and also the corn-husks, which have very beautiful coloring. Nature is indeed good to us if we know how to use her wealth.

I. Chains

Very attractive chains can be made by the little people from materials which they have gathered. The haws from the wild-rose bushes may be strung together, using a large needle and rather coarse thread. Red ears of corn, dried and shelled, supply excellent material for another style of chain. Dried peas and squash or pumpkin-seeds, used together, and strung in different combinations (see Fig. 94), are exceedingly pretty. Acorns and maple wings alternated with pieces of coarse grass about one and one-half inches long (see Fig. 94) form another chain. Horse-chestnuts of small size can also be used, with or without the coarse grass. We might enumerate any num-

ber more, but from these suggestions the children will find something that may be used to form the bright pretty chains that they all love so well.

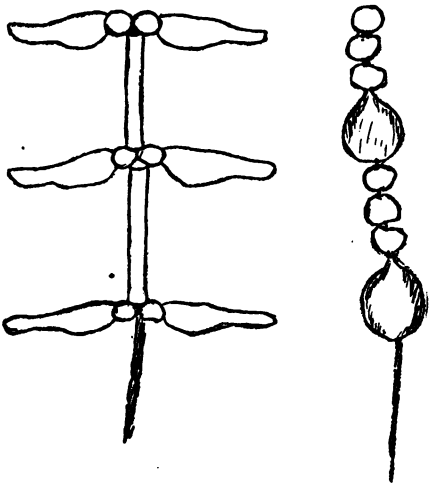


FIG. 94.

II. Fruit-Basket

Materials.— Grape-vines.

All through Italy and Switzerland, as the trains pull into the stations, the hot and dusty traveller sees bands of little children with trays filled with the daintiest baskets, full of the luscious grapes of those countries. These baskets are made of grape-vines, and are woven in the following manner:

Cut five four-inch pieces of the heavier vine; take two of these and split them in the centre for about one and one-half inches (see Fig. 95). Slip the other three through this slit. Take a long slim piece of the vine and, beginning at the smallest end, wind it over and under the crossed spokes, going twice around. Then insert another weaver of about the same size and make three rows of pairing (see Fig. 14); fasten the ends by working them into the weaving. Do not try to press the weavers close together, as in rattan weaving. These three rows should make the bottom about three inches in diameter. At the side of each spoke insert a spoke of vine about sixteen inches long. If the pieces are rather small two

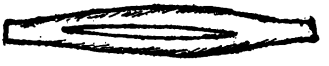


FIG. 95.

may be put in together. The largest end of the vine is pushed in at the side of the spoke. Bring each spoke, or group of spokes, under the one to the right, over the next, and under the next, and down to the lower edge of the basket, leaving a loop which stands up about four inches. Continue in this manner all around the basket; the last two spokes will have to go under, over, and under the first two groups that were used. When all the spokes are down at the bottom, finish them with the following border: Take the first spoke and place it under the next one to the right, over the next one, and back. Do this all around the basket, working the last spokes in through the loops formed by the first. Cut off the ends that are left. Cut two lengths of vine about seventeen inches, and push them into the bottom nearly to the centre, on opposite sides of the basket. These pieces are to form the handle. Bring them up on the outside to the top of the basket, twist the ends together, and then bring them over to the opposite side from where they started. Tie them by working the small end in and out of the weaving and around the handle itself (see Fig. 96). This finishes the basket. Fill it with a grape-leaf and a bunch of grapes, and you will have a very artistic combination.

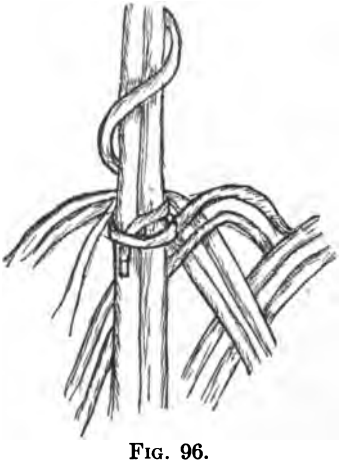


FIG. 96.

III. Hanging-Basket for Ferns

Take six twigs of some pliable wood, rather green, and about a yard long. Tie them together at the small ends,

using the end of one and wrapping it around the others, two or three times; fasten by slipping it into the wrapping. Take each end in turn and place it under the one to the left and out. Continue working in this manner, increasing the spaces between the twists or ties each time, to make the basket larger at the top (see Fig. 97). When you have sixteen or eighteen rows, if the basket is as deep as you desire it, push the last spoke through the same loop that the first one of that row went under. To complete the basket, cut off the twigs rather close to where they are fastened. A handle may be added: Take a long pliable twig, double it in the centre and pass it through the weaving on one side a couple of rows from the top; twist the long ends together and bring them over to the opposite side, where they must be fastened to make a strong finish. Line the inside of the basket with moss, and plant a fern in it. A hoop of wire may be attached to one side in place of the handle.

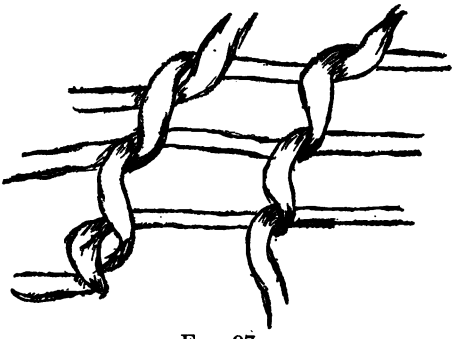


FIG. 97.

IV. Jar Covered with Wistaria

Materials.—Small colored jardinière, or earthen flower-pot.—Wistaria vine.

This idea is borrowed from the Japanese, who have the wistaria vine in great abundance, and who have learned how well it is adapted to this artistic use. Take six long, slim pieces of the vine and cross them three and three in the centre. Tie them, and place on the bottom of the jar to

find the diameter of the bottom or where the weaving is to commence.

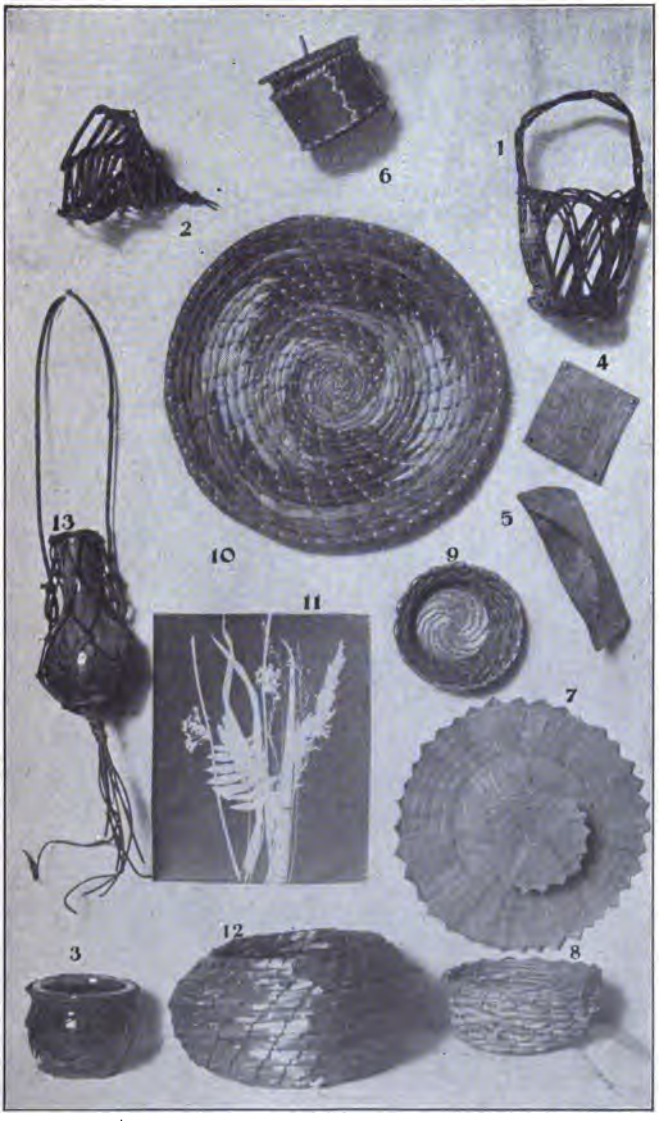
Take another slim piece of vine, double it in the centre, and slip it over one of the spokes. Make three or four rows of paired weaving (see Fig. 14), drawing it in slightly to fit the jar. Cut off the weavers and fasten them by pushing them into the weaving. Cut the spokes at the centre where they were tied, and make the following finish at the bottom close to the weaving. Put each spoke over the one to the right and inside. The last spoke goes through the loop formed by the first. Cut off the ends. The upper part is made by tying the upper part of the spokes in knots: either the Solomon's knot or the sailor's knot may be used—both are described in the chapter on Cord-work. Divide the spokes into groups of four and tie a row of knots around the jar. Then take two spokes from each knot, and tie another row about three-fourths of an inch above the first. Continue in this way, the knots forming meshes, until within one-half of an inch of the top of the jar. Insert a weaver and work with paired weaving to the top, where it may be finished off with the following border. Put each spoke over the one to the right and inside; the last spoke goes through the loop formed by the first.

A long handle may be added in the same manner as described in the fern-basket. The prettiest jars to cover are those which come in the plain glazed colors, green, red, blue, and yellow being the most attractive. If these cannot be obtained, flower-pots of unglazed earthen-ware may be used to good advantage.

V. Birch-Bark

Birch-bark is another material which has many possibilities, and is easily obtained in certain localities. It can be handled by small children as it is quite tough and pliable.

A simple little picture-frame may be made in the following manner: Cut two pieces of the bark three and one-half by



NATURE'S MATERIALS

1. Grape basket.
2. Fern basket.
3. Covered jar.
4. Picture-frame.
5. Canoe of birch-bark.
6. Box of birch-bark.
7. Corn-husk hat.
8. Corn-husk basket.
9. Hemp and grass box.
10. Plaque.
11. Blue-print.
12. Rye-straw basket.
13. Jar covered with wistaria.

three inches, or any other dimensions desired. From one cut a piece from the centre, leaving a one-inch margin all around. Fasten them together at the four corners with McGill fasteners No. A. A. 1, or with a little bow of Poseidon cotton.

In connection with the study of primitive life, a little canoe may be made. Take a piece of bark seven inches long and five inches wide. Find the centre of the two short sides, measure in from there toward the centre one inch, and draw a curved line from that point to the outside edge at the corners (see Fig. 98). The long sides may be slightly hollowed

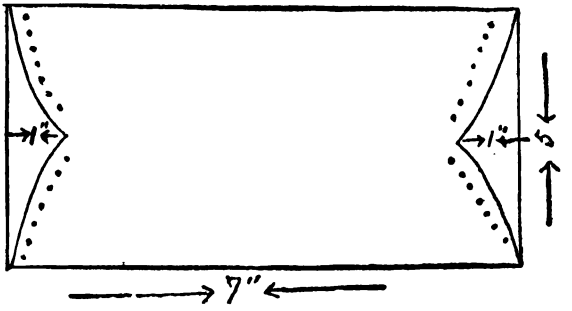


FIG. 98.

in the same way. With a small punch make a row of holes one-fourth of an inch from the edge on the two short sides. Double the bark together and lace through the holes twice with a piece of raffia, making the stitches cross. A decoration of some sort may be painted on the canoe or worked with raffia.

Work for the older children may take the form of boxes or scrap-baskets. For the box, cut two disks of bark, three and three-fourth inches and one three and one-half inches in diameter, one strip two by twelve inches, and one strip one-half by ten and one-half inches. Punch a row of small holes on both edges of the widest strip, about one-quarter of an inch from

the edge and one-half inch apart, and at one end make two rows of holes alternating them. On the edge of the narrow strip put one row of holes, and four at one end. On the disks punch a row the same distance from the edge and spaced in the same way. On one of the larger disks put a second row just inside of the first row punched. This is for the under side of the cover and is to have the narrow strip laced to it to form an edge, which holds the cover on the box. It is now ready to put together. Lap the widest strip one inch, and sew it with raffia, using a herringbone-stitch. Fasten this to the bottom of the box, *i.e.*, the smaller disk, using a straight stitch connected by a slanting one. This makes the sewing very strong, as each stitch passes through the holes twice. The finish at the top is similar, a thin piece of pliable wood or rattan being laid around on the inside of the box, and held in place by the stitches. After working around the top once, turn and come back, crossing each slanting stitch (see Fig. 99). A coil of sweet grass may be put around the top and bottom of the box, and held in place by the stitches. For the cover, after lacing the narrow strip to the disk with the two rows of holes, place the two together and lace them around the outside edge in the same manner as the top of the box. Make a small ring of raffia and fasten it to the centre of the cover. The birch-bark for these boxes must be of rather heavy quality.

FIG. 99.

VI. Corn-Husk Hat

Materials.—Square of brown paper.—Corn-husks.

The hat shown in Plate XVI, No. 7, is a miniature of those worn by the negroes in the cotton-fields. They are very light, easily made, and cost practically nothing.

Take a square of paper the diameter of the hat desired, fold it first in half, then in quarters, forming a small square. Fold this on the diagonal, and keep folding it in this way until the short side is on top. Cut off the paper to the length of this short side. Measure down from the point, one-sixth of the head size, and cut off. This will give the brim for the hat. Cut a circle or disk for the top of the crown in the same manner. These pieces and a straight piece for the side crown are to be covered with the corn-husks. Cut the husks into one-inch strips and point one end by folding the two corners to the centre. Lay these strips on the paper brim so that the points extend just beyond the edge, and the strips overlap each other slightly at the outer edge; bring them to the centre, where they will lap considerably, and baste to hold them in position. On the under side of the paper, the strips may be wider, and the ends straight instead of pointed. Turn them under and place them even with the outer edge of the paper; lap them in the same way as on the upper side. Take the piece of paper for the side crown and cover it with the husks in the same manner as the upper brim, pointing one end of each strip and letting it extend about one inch beyond the edge. The crown is made in the same manner, the pieces meeting in the centre, where the ends are covered with a small circle of husk. After all the pieces are prepared, they are to be stitched on the machine to hold them in place. Start in the centre and stitch around the crown, spacing the rows about three-eighths of an inch apart. After the crown is stitched, put three or four rows on the side crown. Then baste it to the brim, lapping the points the width that they extend beyond the paper, stitch it in the same way as the crown. Fasten the top of the crown and the side crown together by taking several stitches between each point. Trim out the head size. These hats are quite attractive when trimmed. If a machine is not available for the finishing, some fancy stitch that will hold the husks in place may be used.

VII. Corn-Husk Baskets

In some localities where corn-husks are very plentiful, they may be used for baskets in place of raffia. The coiled basket described in Chapter III works out very well with the husks, which may be split and used for the sewing also. Several pieces are laid together and are wrapped with an extra piece to form a coil. The short length of the husk necessitates frequent piecing; always lap them with the small end over the large one. To piece them for sewing tie them together with an overhand knot.

Plate XVI, No. 8, shows a basket where the spokes are of rattan and the weavers are of coiled corn-husks. Take eight pieces of No. 3 rattan, sixteen inches long, and one, nine inches long. Cross them four and four in the centre, and add the extra spoke either at the corner or in the centre of one side. Tie in place with a strand of raffia. Have ready a coil of the husks about six yards long, and use it as a weaver, passing it over and under one spoke each time. When the mat is about four and one-half inches in diameter, bend the spokes up at the sides and continue with the weaving until the sides are about one and one-half inches high. Cut off the coil and tie the ends to keep them from unwinding. Take a weaver of No. 2 rattan, double it in the centre and make several rows of paired weaving (see Fig. 14) around the top of the basket. Cut off the ends and work them into the weaving. Finish the top with the following border, after the spokes have been soaked to make them pliable. Place each spoke in succession back of the next one to the right, in front of the next, and back of the next to the inside of the basket. The last two spokes will be worked through the loops formed by the first ones. After the border is dry, trim the ends of the spokes to within one-half inch of the border.

VIII. Grass and Hemp Baskets

The most artistic use we can make of the materials that Nature offers to us, is the grass basket sewed with hemp. These baskets are by far the most difficult to execute of any that have been thus far described, but are so charming when finished that they repay one for the time and labor they demand. Hemp in its natural color may be bought at any cordage company. It is a fibre which takes the dye easily, and artistic colors may be obtained by the use of vegetable dyes. To prepare it, divide it into hanks about as large as the wrist, and wrap it in coils. It can be dampened before putting it in the dye, but it does not need to be put in a mordant. To dry it, loosen the coil and hang it up; after drying, it is best to coil it again, as it is a delicate fibre and apt to become tangled and easily broken.

The grasses for these baskets should be gathered in the early part of the summer, before they blossom; long, pliable leaves are the best for the purpose. They should be thoroughly dried in a shady place as the sun will take out some of the charming color. Grasses which grow in swampy land will be found excellent for this purpose. Rushes, flag, and the broad leaves of the prairie grasses may also be used. The stiff grass which comes up the last of August, after the hay has been cut, and which turns a soft brown with the first frost, makes a nice variation in color. It is also good to use for filling, as it is very firm. Rye straw sewed with yellow or green hemp is very artistic. The corn-husks which are used to make a pattern in the baskets, may be found in many colors—yellow, red, and a reddish brown.

As the hemp is rather difficult for a beginner to manage, it is best to sew the first basket made with raffia, using the hemp for the centre, and putting in the grasses around the edge for a finish.

Take a bunch of hemp about as large as the little finger (in

dividing the hemp always try to divide it where it separates naturally, and take hold of it near the centre, pulling it both ways), wrap the large end five times with raffia of a contrasting color which has been threaded into a large-eyed needle, spacing the wrappings about one-fourth of an inch apart. Coil in a small circle and take one stitch through to hold it. Then begin sewing the long end of the hemp down, taking a stitch in each of the first five wrappings. The hemp is held in the left hand with the thumb and second finger, the first finger being left free to hold each stitch in place while the

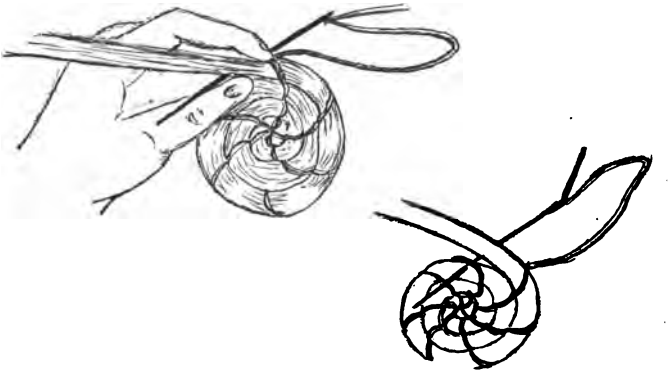


FIG. 100.

raffia is being drawn through the coil; the long end of the hemp must not be held by the hand, but be left loosely hanging to the left (see Fig. 100). Each stitch is taken through the coil, the needle being put in from the back toward the worker, and so that it passes under the stitch in the last coil; before this stitch is pulled through, place it at the desired angle, and hold it firmly with the first finger. This forms the swirls. When the stitches get too far apart, new ones are added half-way in the spaces. Do not have the stitches too close together, as it will spoil the effect. Each stitch must be pulled tight before the next one is put in, for upon this de-

pends the beauty of the basket. As the hemp becomes thin, another bunch may be added by separating the old one and hiding the new ends between. Continue sewing until the bottom is about three and one-half inches in diameter. Cut off the ends of the hemp to within two and one-half or three inches of the last stitch. Take a bunch of long green grass, about the same size as the hemp, arrange it so that all the large ends are together and, separating the hemp as before, hide the ends. Take one or two stitches over both grass and hemp, and then gradually work the latter to the wrong side of the basket, where it is cut off. In working with the grass, the coil must be kept full—this means adding grass frequently, always working toward the small end and hiding the new large ends by placing them in the centre of the old ones.

When the bottom of the basket is large enough, begin building it up on the sides. The same principle applies here as in coiled basket described in the chapter on Raffia; the angle at which the coils are laid on one another determines

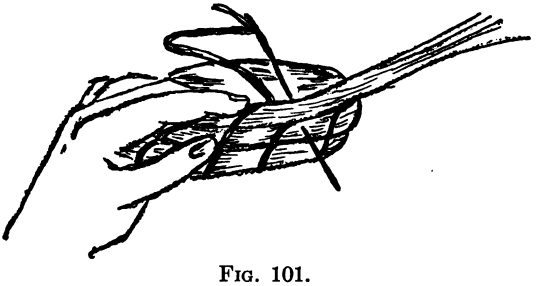


FIG. 101.

the shape. The grass being stiffer than the raffia, it will be necessary to shape it somewhat with the hands. In order to finish the basket at the top, cut out some of the grass and lap the ends down on the outside, sewing them firmly. This way of building up the sides is only used where the inside of the basket is the right side.

In shaping a basket, where the sides are to curve out and

then be brought in, a different principle is used. When ready to turn it up, bring the material with which you are sewing under the coil and turn the basket around so that the grass extends toward the right instead of the left. Place the needle through each stitch in the same direction you have been working (see Fig. 101); this will change the slant of the stitch but will bring the right side of the basket toward the worker.

A basket started with grass and sewed with hemp is more difficult to manage on account of the quality of the hemp. This must be divided into needlefuls before beginning to sew. Tie up each one separately, and place them in some convenient spot where they will not become tangled with the grass. A sail needle is the best to use, and each needleful should be large enough to pass through the eye easily. Take away all the short pieces, as they will only bother later, and thread in the needle from the large end; if slightly dampened the hemp will work better. To piece the hemp use a weaver's knot (see Plate I, No. 9) and tie close to the last stitch. Follow the directions for sewing with the raffia, being sure to hold each stitch down carefully with the first finger while pulling the hemp through. Keep the coil of grass full, *i.e.*, about the size of the finger. When the bottom is large enough bring the hemp under the coil to the outside, and continue sewing, building the coils on top of one another. Better effects may be gained by using heavier grasses for the upper part of the basket. Keep the grasses parallel to each other, and do not let them twist.

It is well to make a design for the shape before beginning to work; any pottery form will answer nicely. Plate XVI, No. 10, shows a plaque or tray where the corn-husk is put in to form a pattern; the centre is started the same as the foregoing basket. After working until the centre is about three inches in diameter, start the pattern in the following manner: Tear the corn-husk into strips about one inch wide by three inches long, fold the long edges in slightly toward the centre. Gather

one end together and slip it under the coil of grass to the wrong side, close to the last stitch. Wrap the long end over the grass and take two or three stitches, gradually working the other end over to the wrong side of the basket; this should make both ends on the slant (see Fig. 102). When exactly opposite where the first piece of husk was put in, insert a second one in the same way, and sew it down with the same number of stitches. This starts the pattern, which may be worked out in any form desired, increasing and decreasing the spaces covered by the husk.

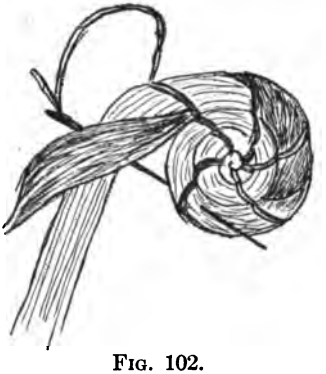


FIG. 102.

In piecing the grass, it is well to do so under the husk as it will show less. Bands of different colored grasses may be worked in with very good effect. In finishing a large plaque or basket insert a stitch between each swirl for the outside row.

IX. Blue Prints of Grasses

Materials.—Blue print paper.—Printing frame.—Grasses or ferns.

These prints are very easy to make and are exceedingly attractive.

Gather the grasses, leaves, or ferns, and place them in the printing frame between the glass and the paper. Expose them for about ten minutes, and then wash the print in cold water.

The children can make interesting books by mounting the prints on one page, and writing a description of the grass or leaf on the opposite side.

THE END